THE

JOURNAL OF GAS LIGHTING.

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No. 20.] LONDON, SEPTEMBER 10, 1850. [SUPPLEMENT { Price 6d. Stamped. „ 5d. Unstamped.

SECRETARY Wanted.—The Directors of the EUROPEAN GAS COMPANY are desirous of engaging the services of an active and experienced SECRETARY, who has for some years been accustomed to the routine of a counting-house. It is requisite that he should be conversant with the French language, write a good mercantile hand, and be capable of bookkeeping by double entry. Applications by letter only, stating salary, qualifications, age, and general experience, may be addressed to A. B., 39, Finsbury-circus, London.

A. WRIGHT, Gas Engineer and Meter Manufacturer, 55, Millbank-street, near the Houses of Parliament, Westminster, respectfully calls the attention of Gas Companies and Engineers who are not yet provided with Station Meters to the fact that he has erected two of the largest machines of this kind in existence, the one for the Chartered Gas Company, London, the other for the Hibernia Gas Company, Dublin, for both of which he has obtained the highest testimonials.

To this branch of business A. W. devotes much attention, as well as to the Manufacture of all kinds of Experimental Machinery for Gas purposes.

Consumers' Meters of all sizes at the usual prices, with a liberal discount to wholesale purchasers.

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USEFUL HINTS on VENTILATION, explanatory of its leading principles, and designed to facilitate their application to all kinds of buildings; containing also practical information on the use of gas for this purpose. By W. WALKER, Engineer.

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WM. DONALD and CO.,

MANUFACTURERS OF IMPROVED GAS METERS,

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N.B. These meters have the adjusting slide and hydraulic. Testimonials can be given from London and Provincial Gas Companies.

PATENT for Sale, for valuable Improvements in the Construction of DRY GAS METERS.—Application to be made to Mr. Thomas G. Barlow, Civil and Consulting Gas Engineer, 32, Bucklersbury, London, where the meter may be inspected.

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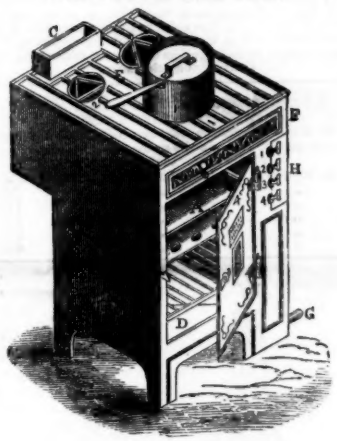

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who also manufacture all descriptions of Valves, Machinery, and Apparatus for Gas and Water Companies.

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NEWCASTLE-UPON-TYNE.

COKING COAL and COKE of the best quality; superior CANNEL COAL, and FIRE GOODS of all descriptions.

Analysis of Garesfield Coke, by Dr. Richardson, of Newcastle:—

Carbon	97·60.
Ashes	1·55.
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Products of Ramsay's NEWCASTLE CANNEL COAL, as ascertained by Drs. Leeson and Miller, and G. H. Palmer, Esq.:—

Gas per Ton of Coal, cubic feet ..	9·067.
Specific Gravity	0·731.
Illuminating Power	1·85 to 2·03.

ordinary Newcastle Coal Gas being 1.

Coke per Ton of Coal	13½ cwt.

Broad Chare, Newcastle-upon-Tyne.

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MANUFACTURER of APPARATUS for advantageously applying GAS HEATS to CHEMICAL, CULINARY, MANUFACTURING, and various DOMESTIC PURPOSES, No. 5, AGAR-STREET, STRAND (opposite Charing-cross Hospital), London.

RUFFORD'S FIRE-BRICKS, RETORTS, CRUCIBLES, and CLAY. A large stock always on hand, and every description of Fire-proof goods carefully and promptly made to order.

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DEFRIES' Patent Gas Bath.—By the use of the above, a HOT BATH can be obtained in six minutes for less than twopence. Every family should provide itself with this invaluable requisite, its limited cost placing it within the means of all, and its simplicity within the management of a child. DEFRIES' ECONOMIC GAS COOKING STOVES are adapted for all establishments, large or small, and need only to be seen to be appreciated for their cleanliness and economy, entirely dispensing with all coal. To be seen daily in operation (Saturday excepted) at 221, Regent-street, and also in action.—Defries' Dry Gas Meter, 40,000 in use. N.B. The apparatus can be applied for all heating purposes.

WM. PARKINSON

(*Successor to the late Samuel Crosley*),

COTTAGE-LANE, CITY-ROAD, LONDON,

Begs most respectfully to announce that he has, in addition to the continued manufacture of GAS METERS, commenced (under Patent) the manufacture of Meters for measuring Water, Spirits, &c.

N.B. These Meters are as simple and durable as the Gas Meter, and as correct as that instrument under the most careful manipulation.

CHARLES WALKER and SONS, Little Sutton-street, Goswell-street, London, respectfully solicit the attention of the Directors of Gas Companies and Engineers to their Registered Improved Gas Valve, for stations and street mains, which possesses the following advantages:—

1st. The valve will work as free in liquids, where others will stick, such as in tar, lime, &c., as in pure gas.

2nd. The working parts can always be supplied with oil, and when the valve is raised the gland slides off any incrustation on the spindle, which then receives a supply of oil from the box.

3rd. No risk of the valve falling down, and the most careless cannot damage the working parts.

4th. The valve need never work on its edge, as is the case with all rack valves.

5th. It has a legible index of the height of valve.

6th. They will last longer, and are cheaper than ordinary valves.

All the joints are truly planed; they can, therefore, be taken to pieces and put together with very little trouble, and they have had the experience of twelve months' working in crude gas.

CHARLES WALKER and SONS take this opportunity of stating that they manufacture all Machinery and Smiths' Work for gas companies, and will be happy to furnish estimates.

PRICES:

10 in. to 14 in. diameter ...	13s. per in.	With Index for showing the opening of valve.
4 „ 9 „ ...	14s. „	
2 „ 3 „ ...	15s. „	

LESMAHAGO GAS COAL.

JAMES FERGUSON,

LESSEE OF THE AUCHINHEATH GAS COALFIELD,

The most extensive and valuable in the parish of Lesmahago, respectfully intimates to the Managers of Gas Works and Consumers of Gas Coal, that he is prepared to ship the best quality of the above well-known COALS at Glasgow or Leith,—and also to deliver them at the Railway Stations upon, or connected with, the Caledonian Railway,—to any extent which may be required.

Price, free on board, or delivered at the Railway Stations, may be learned, by addressing James Ferguson, Gas Coal Works, Lesmahago.

Attention is solicited to a paper by Andrew Fyfe, M.D., F.R.S.S.E., F.R.S.S.A., Professor of Chemistry King's College University, Aberdeen, read before the Royal Scottish Society of Arts, April 24, 1848, since published in the first number of the GAS JOURNAL, Feb. 10, 1849, in which the following extracts may be seen in reference to the Lesmahago Gas Coal.

"The objects which I have had in view were to ascertain not only the *comparative amount of light* afforded by the gases which the coals yield, but also the *durability* of these gases, so as to enable me to fix, as far as possible, their *comparative value*; and, consequently, their comparative expenses for the purpose of illumination. I have, in the following experiments, invariably had recourse to the method mentioned in my former papers, viz., the condensation of the chlorine, and in which, now that the trials have been greatly extended, I place the utmost confidence.

"*The value of gas* from Lesmahago Coal, which by gas makers is generally considered the best in the market, I have found to be 6·6 to English caking coal gas as 1·, the quantity of gas being as 1·13 to 1·, accordingly the value of Lesmahago Coal is at least 7 to 1; taking English cannel coal gas 1·, then the Scottish is from 2·63 to 2·72, say 2·7."

Statements made in the paper alluded to:—

DESCRIPTION OF COAL, AND WHERE USED, &c.	Comparative value, English Caking Coal taken as unity.	Condensation by chlorine, average of several trials, per cent.	Durability of a cubic foot with a 4-inch flame, and a jet 1-33 of an inch in diameter.	Pressure by water gauge at the burner.	Cubic feet per ton.	Average specific gravity—air 1000.
English Caking Coal (from Newcastle, used in London and other places), Gas at Newcastle	1·00	4·33	50′ 30″	11-10ths of an inch.	8,000	·420
Same Coal, result of eight trials.....	.....	5·00 nearly	50′ 25″	.....	.....	·464
Wigan Cannel Coal, used in Liverpool, Manchester, &c.....	1·93	7·55	57′	8-10 to 9-10	9,500	·460 to ·520
Yorkshire Parrot, found in different parts of Yorkshire, and occasionally used in Manchester	1·81	7·66	52′ 30″	8-10	about 11,500	
Lesmahago Gas Coal, used extensively in Glasgow, Edinburgh, Aberdeen, &c., and partially in London, Dublin, Paris, St. Petersburgh, New York, &c. &c.; average of six trials by Dr. Fyfe	7·00	17·1	65′	.....	11,020	·642

Auchinheath, Lesmahago, Sept. 1850.

WILLIAM SUGG, Gas Engineer and Manufacturer of Patent Wet and Dry Gas Meters, combining all the latest acknowledged improvements; Brass Founder, Gas Fitter, and Lamp Contractor; Manufacturer of all kinds of Plain and Ornamental Gas Apparatus, and Contractor for the Erection of Gas Works. Designs and Estimates submitted; Station Meters and Governors of any size.
Gas Meter and Apparatus Works, 19 and 20, Marsham-street, Westminster.

WEST BROTHERS and CO.,
LATE
THOMAS WEST,
GAS METER MANUFACTURERS, BRASS FOUNDERS, &c., UNION-STREET, OLDHAM.
Station and Experimental Meters, Gas Pressure Registers, Gauges, Experimental Gas Holders, Governors, Slide Valves, &c. &c.

SHEARS and SONS' Patent Dry Gas METER.—Shears and Sons beg to call the attention of Gas Companies, Gas Fitters, and the Public to their Patent Dry Gas Meters, which possess the advantages of perfect registration under all pressures of gas, of great steadiness in the lights, of simplicity in construction, and of great durability; besides others, not the least of which are the form and arrangement of the valves, by which the objection to sliding valves is avoided.
After thoroughly examining and practically testing these Meters for a considerable time, the leading Metropolitan Gas Companies, to whom they have been submitted, have approved of them, and are now using them; and it is the opinion of a large number of the most experienced and competent gas authorities that these Meters only require to be more known to be generally adopted by gas consumers who desire to have the best Meter with the least trouble and inconvenience.
S. and S. also manufacture Wet Gas Meters, to which they apply their patent index.
BANKSIDE, London.

PATENT GAS METER MANUFACTORY,
No. 65, Snow-hill, London.
WILLIAM SMITH, by the improvements he has made in the Wet Meter, and which he has secured by her Majesty's Royal Letters Patent, the accuracy of their registry is rendered certain by the introduction of the adjusting slide and hydraulic, whereby a Perfect Water Level is readily obtained, and the Hydraulic precludes the possibility of abstracting water from the meter by increased pressure or otherwise, thus surmounting the great desideratum of the Wet Meter. In his Patent Equitable Gas Meter neatness and strength are combined, the backs and fronts of the case being stamped by powerful machinery out of thick plate iron (tinned or galvanized); and the internal construction is of the best metal, which will resist the action of any impurity in the gas.
Old Meters may readily have the adjusting slide and hydraulic applied, thereby having accurate measurement assured.
Station Meters, Governors, &c., made on the shortest notice.

PATENT FLEXIBLE GAS TUBING.
JAMES LYNE HANCOCK'S Vulcanized Indiarubber Hose Pipes and Tubing. Manufactory (and Warehouse), Goswell-mews, Goswell-road, London.
Gas Companies, Engineers, Gas Fitters, and the Trade generally, are respectfully informed this Tubing is now manufactured to any size, from ¼ inch bore and upwards, in 100-feet lengths, and perfectly cylindrical, either with or without a spiral wire inside.
VULCANIZED GLAZED FLEXIBLE TUBING, from ¾ inch up to 1 inch diameter, made in 24-feet lengths; or, covered with silk or worsted, up to 100 feet.
VULCANIZED HOSE, for FIRE ENGINES, BREWERS' USE, and for standing great pressures, (Rubber and Cloth combined), made to any length or size to fit the necessary screws, &c.
VULCANIZED INDIARUBBER AIR-TIGHT BAGS, made any size, for Gas Mains, with flexible tubes attached, and fitted with stopcocks complete.

HARPERS and MOORE, of the Delph Fire-brick and Clay Works, Stourbridge, invite the attention of Gas Companies, Engineers, Oven Builders, and all consumers, to their Stock of FIRE-BRICKS, LUMPS, or BURRS, QUARRIES, CLAY, and other Goods, a large assortment of which is always kept at their London Depôt, No. 7, Wenlock-road, City-road; also Melting-pots for Brassfounders and Metal Refiners. These articles are made in a very superior manner from clay of the very best quality, and have been proved by metal-melters (who can be referred to) to have withstood the most severe tests, and for very long periods.
Shipping orders supplied, and every description of Fire-clay Goods made to pattern or drawings on the shortest notice.
H. and M. particularly invite the attention of Gas Companies to a trial of their Fire-clay Retorts, which they are now making in a very superior manner, and of a quality which, on trial, will be found to surpass anything of the kind hitherto produced. The superior quality and peculiar admixture of their clays enable them to manufacture an article which fully admits of the necessary expansion and contraction, to allow of their being let down at the end of a season, when the usual supply of gas is not required, and again put to work for successive seasons without fear of cracking or leakage from any other cause.
H. and M. further beg to direct attention to the evidence of Mr. Croll, given before a Committee of the House of Commons, relative to the use of Clay Retorts (see "Gas-lighting Journal" of April 10, 1849, pages 43 and 44). The Clay Retorts there referred to by Mr. Croll were made at, and supplied from, the works of Harpers and Moore, as above.
Testimonials can be seen, and further information obtained, on application, if by letter, prepaid.

THOMAS EDGE'S
PATENT DRY AND WET GAS METER WORKS,
GREAT PETER-STREET, WESTMINSTER.
THOMAS EDGE, in drawing the attention of Gas Companies and Consumers to his DRY GAS METER, begs to say that such modifications and improvements have been made to it since its first introduction, as renders it now quite unassailable. It is the most perfect Meter extant.

GEORGE and SAMUEL CUTLER,
GASHOLDER AND BOILER MAKERS,
No. 21, WHARF-ROAD, CITY-ROAD,
LONDON.
Contracts for Tanks, Gasholders, Roofs, Purifiers, and all descriptions of Gas Apparatus executed on the most reasonable terms. Slide Valves, Steam and Range Boilers, and Smiths' Work, of the best materials and workmanship.

E. WHITEHOUSE & CO.,
GLOBE PATENT TUBE WORKS,
WEDNESBURY,
Beg to draw the attention of Engineers and Managers of Gas Works to the superior quality of the Article they manufacture, both in respect of the iron employed, and the perfect manner in which it is welded; in proof of which they can refer to the testimonials of the most eminent Gas Engineers, and the experience of the principal of the large Gas Companies of the kingdom.
Orders promptly executed.

CLEGG'S New Patent Gas Meter.— LONDON—24, REGENT-SQUARE.
In these Meters the varying height of the water makes no difference in the measure.
PRICE OF STATION METERS.

To measure	60,000	cubic feet	per 24 hours	£50
"	120,000	"	"	75
"	240,000	"	"	100
"	500,000	"	"	150
"	1,000,000	"	"	250
"	2,000,000	"	"	400

CAST Iron Retorts, Socket Pipes, and Connections of every size suitable for Gas and Water Works, Lamp Columns, Wrought Iron Tubing, Hot Water Pipes, Rain Water Pipes, and Eaves Gutters, in stock, and sold on the lowest terms, at LYNCH WHITE'S Iron Wharf, 66, Bankside, London.

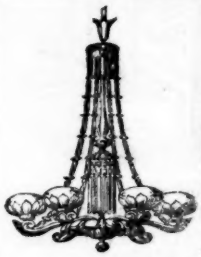
M. SHEEN, Gas and Railway Lantern Maker, 90½, Holborn-hill, begs to inform Managers of Gas Works, &c., that she continues to contract and supply Lanterns on reasonable terms, and keep them in repair by the year.

ESTABLISHED IN 1834.
S. KING, Gas Meter Manufacturer, 21, Cock-lane, West Smithfield, London.
Meters made of the best materials and workmanship, with all the recent improvements, and warranted correct in registration.

FIRE BRICKS.
JAMES NEWTON, late J. Newton and Son, Falcon Dock, Bankside, London, Depôt for Stourbridge and Newcastle Fire Bricks, Lumps, Tiles, Fire Clay, and Clay Retorts, &c., for Gas Works.
Goods made to pattern on the shortest notice.

TO GAS COMPANIES.
THE BRYMBO COMPANY,
NEAR WREXHAM,
Manufacture Cold Blast Retorts and Pipes of a very superior quality, and also ship good Gas and Steam Coals at Saltney, on the River Dee, and at Birkenhead.
Brymbo Iron Works and Colliery, North Wales.

TO Gas Companies, Water Companies, and Others.—TO BE DISPOSED OF, about NINETY 24-Inch MAIN PIPES, at — per ton.
Application for particulars as to price, &c., to be made to the Storekeeper at the Chartered Gas Light and Coke Company's Works, Horseferry-road, Westminster.—February, 1850.



F. & C. OSLER,
44, OXFORD-STREET, LONDON;
MANUFACTORY—BROAD-STREET, BIRMINGHAM,
Manufacturers of Glass Chandeliers, Glass Lustres, Table Glass, &c. &c.
ELEGANT CRYSTAL GLASS CHANDELIERS, FOR GAS
(Made from "REGISTERED" DESIGNS), with GLASS BRANCHES, &c.; suitable for DRAWING-ROOMS and BALL-ROOMS. From £4. 15s., upwards. The more extensive use of GAS in private dwellings has induced Messrs. OSLER to direct their particular attention to the manufacture of this class of articles—which, with a view to their general adoption, are offered at very moderate prices. Purchasers can select from a great variety of patterns, to which additions are being constantly made.
THEATRES, CONCERT, ASSEMBLY, AND BALL ROOMS LIGHTED BY ESTIMATE, ON THE LOWEST TERMS.

BY HER MAJESTY'S ROYAL LETTERS PATENT.
CROLL and GLOVER, Patent Dry Gas Meter Manufacturers, Suffolk-street, CLERKENWELL-GREEN, LONDON, beg respectfully to call attention to the following extracts from testimonials in favour of their Meters. The respectability of the parties will be esteemed by all acquainted with gas matters as affording the most indubitable evidence of the superiority of their Patent Dry Gas Meters, proving that gas companies and gas consumers may rely on them for a just and unvarying registration, durability, and the absence of all trouble arising from condensation of water in the fittings, and the impossibility of their being stopped by freezing in the coldest climates.
CROLL and GLOVER take this opportunity of remarking to Gas Companies that the apprehension so generally entertained by them, viz., that if Dry Meters were introduced into their districts their Stock of Water Meters would be thrown on their hands, while this has not happened even with those Gas Companies who have for years back purchased none but Dry Meters; this apprehension ought to lead Gas Companies to a speedy investigation into the merits of Dry Meters, so that they may not, year after year, be increasing their stock of Water Meters, which they themselves apprehend must one day be thrown out of use.
CROLL and GLOVER humbly think that the following extracts prove that the merits of their Meter are entitled to prompt attention of Gas Companies.
Almost all the testimonials bear the date of November, 1848.
EXTRACTS.
"The Chartered Gas Company have purchased and fixed up above 2,000."—GEORGE LOWE, *Civil Engineer, F.R.S., &c., Consulting Engineer to the Chartered Gas Light and Coke Company, London.*
"We have in this district from seven to eight hundred, and are daily fixing more."—F. I. EVANS, *Superintendent at Chartered Gas Light and Coke Company's Station, Brick-lane.*
"I invariably found the flames perfectly steady, and the gas accurately measured."—A. H. STILL, *Superintendent at Chartered Gas Light and Coke Company's Station, St. Luke's.*
"I beg to state that ont of 800 Meters of the square form, and anti-corrosive metal, I find only twenty have been entered in our return-book, chiefly for broken index-glasses. The company are continuing to purchase and fix up your Meters in considerable quantities."—WILLIAM MONRO, *General Superintendent and Engineer of the Phœnix Gas Light and Coke Company, London.*
"I have much pleasure in stating that the Meters we have received with your last improvements have given great satisfaction."—JOHN AIRD, *Superintendent of the Phœnix Gas Light and Coke Company's Station, Greenwich.*
"I have had some of them in use for nearly four years. In certain situations exposed to the influence of the climate I have found them to be the only description fit for use, as well as in confined and overheated situations, where the water in the Water Meters is acted upon by evaporation."—ROBERT LAING, *Secretary and Superintendent of the Independent Gas Light and Coke Company, London.*
"Having had, in all, up to the present time under my inspection 609 Meters of your manufacture, a very good opportunity has thus been afforded me of judging of their merits. The result of my observation in respect of registration and steadiness of light is, that the Meters have given perfect satisfaction."—D. METHVEN, *Engineer and Superintendent to the Commercial Gas Light and Coke Company, London.*
"The advantages which I have found attending the use of your Dry Gas Meters, in preference to the Wet Meters, are so important, that nothing would induce me to return to the use of the latter. As Station Meters yours have the additional advantage, that there is no water-line to attend to, or to be subject to neglect."—CHARLES DIXON, *Engineer of the Chichester Gas Light and Coke Company.*
"I have also had sufficient opportunity of knowing that they are not affected by the most severe frost, nor where one of them was fixed did I ever know of condensation taking place in the inside gas fittings of any premises."—SAMUEL PONTIFEX, *Manager, Winchester Gas Light and Coke Company.*
"We are now using your Meters solely."—CHARLES PURVES, *Manager, Gas Works, Gosport.*
"It is now nearly 2 years since we commenced using upwards of 100 of your Dry Meters, and during the whole of that time have not taken one of them down, for any cause whatever. This is an unvarnished, practical fact, and unprecedented, as far as my experience goes; therefore I have no hesitation in stating that I prefer them to every other Meter with which I am acquainted."—J. THOMAS, *Manager, Consumers' Protective Gas Light Company, Woolwich.* April 19, 1849.
"Previous to using them I held theoretical objections, which I can now say have been removed, and their superiority as an instrument of unvarying measuring capacity has been fully established."—EDWARD H. THORMAN, *Superintendent of the West Ham Gas Company.*
"I have delayed giving my opinion of your Meters until I had had another winter's experience; and, notwithstanding some of them were placed in the open air, not one became fixed. We have had a short winter, but the frost is very severe."—P. T. W. de TIMMERMAN, *Director of the City of Leyden Gas Works.* Jan. 26, 1849.
Station Meters, Station Governors, Pressure Registers, Experimental Meters, and Specific Gravity Apparatus.

CONTENTS.

	PAGE
Circular to Gas Companies	283
Correspondence:—	
On Resin and Water Gas	283
Register of New Patents:—	
C. Lizars, for improvements in gas meters	285
R. Holliday, for improvements in lamps	285
J. Webster, for improvements in the production of gas for the purposes of light	285
G. H. Palmer and J. Horton, for improvements in the arrangement and construction of gasholders	285
W. Cormack, for improvements in purifying gas, &c.	286
Miscellaneous:—	
Great Central Gas Consumers' Company	287
City Court of Sewers	289
Gillard's Water and Platinum Gas	290
The Western Gas Company	291
Stewart's patent pipes	291
Laming's Patent	291
The Electric Telegraph	291
Soyer's Magic Stove	291
Islington Parochial Reform Association	291

TO SUBSCRIBERS.

We have received the following reply to a note reminding the writer that his subscription for the current year had not been paid:—

"In reply to your note of the 17th inst., I decline paying any subscription for the present year for the JOURNAL OF GAS LIGHTING, on the ground that I never ordered you to send more copies than I have already paid for. You may, therefore, discontinue sending me my Journals in future; having gone out of the trade, those you have sent have been of no use to me for a number of months past."

Such conduct will not, we trust, find other imitators. It would have been more honest in the writer to have refused the seven journals he has received, and thus ensured their being returned to us, than to have taken them in, and then declined to pay for them. The reply received from a provincial gas company, in answer to a similar communication, forms an agreeable contrast. It is as follows:—

"I am instructed by the directors of this company to enclose you a check for five guineas as their subscription for five copies of your excellent Journal for the current year; and, in handing you this sum, they desire me to express their obligations for the valuable information it has afforded them, and for the economy effected in the purchase of their materials in the cheaper markets indicated by the advertisements of manufactures which it contains."

All subscriptions must be paid to the proprietor at No. 32, Bucklersbury.

No extra charge is made to subscribers for the increased size of this month's Journal.

NOTICES.

Parties who receive the JOURNAL OF GAS LIGHTING *through Booksellers are requested to take notice that the Office for its publication is removed from* 21, *Paternoster-row, to* 88, *Cheapside.*

All communications and orders for Advertisements to be addressed to the Editor, 32, Bucklersbury, London.

Circular to Gas Companies.

The general reduction which the price of gas has everywhere undergone during the last two years, has done much to clear away the prejudice which so long obstructed the path of those early labourers in the field of social improvement, who directed the attention of the public to the other domestic uses, besides that of lighting, of which gas was destined to be the medium. Many of our readers in the midland counties will recollect the substantial gas-cooked repasts and ingenious lectures, with which eighteen or twenty years ago Mr. James Sharp (then of Northampton) gratified and instructed the public, demonstrating the advantages of those novel applications of gas which he had in his own family practised for several years previous, and it must be gratifying to him to see their value now so generally admitted. Time and experience may since have modified and, perhaps, have improved upon the apparatus then used; but the increasing favour with which the employment of gas for culinary, heating, ventilating, and other processes is now received, is especially due to the reductions which have taken place in the price of the material employed, and to the wearing away of those prejudices which invariably attend the introduction of all innovations upon preconceived opinions. It took at least twenty years to overcome the prejudices existing against the general use of gas for artificial light; and it is, therefore, not surprising that its use for other purposes, less capable of unequivocal demonstration, should have had a similar period of doubt and difficulty to contend with. It has now, however, triumphed over all opposition; and we have lately witnessed the celebrated *chef* of the gastronomic art, regaling his guests with a monster joint of 565 lbs. in weight, cooked in an extempore oven in five hours by 750 cubic feet of gas, the produce of 1½ cwt. of coals, with a loss of only 11¼ lbs. in the weight of the cooked joint, and the dripping and osmazome collected. Nor have its advantages for domestic cooking been less significantly demonstrated, as hundreds of families and public establishments can now testify, that in the quality of the viands, as well as in cleanliness and in economy, the new system is incomparably superior to its antiquated rival. Further improvements are daily taking place; and we regret that our narrow limits again compel us to postpone Mr. Edward's description of his "Atmopyre," which we had hoped to be able to insert this month.

We have been induced to draw the attention of our readers to this subject, from the conviction that therein lays the chief source of the future prosperity of gas companies. With the same mains, and with but slight additions to the apparatus required for the night lighting, a large increase of revenue may be derived, solely by finding full employment for that portion of the capital expended in main pipes, which is dormant and unproductive during twelve hours out of the twenty-four. Only one-tenth of the total quantity of coal annually imported into London is at present employed in the production of gas for light, and nine-tenths are therefore used for generating heat in some form or other, of which a large portion is consumed in culinary and other domestic operations. Some idea may thus be formed of the field which is opened to the gas manufacturer; and as it is capable of demonstration that 9250 cubic feet, the produce of one ton of Newcastle coals, may be so applied in the kitchens both of the rich and of the poor, as to produce the same effect as three, if not four tons of the same coals when wasted, as they now are, in an ordinary kitchen range, it is quite evident that the interest of gas companies, as well as the public, must be materially advanced by promoting and facilitating the employment of gas for such purposes.

While upon this subject it may be useful to direct the attention of our readers to a little work on ventilation,* which has just been published in the manufacturing metropolis of the empire, and to which we may have occasion hereafter to refer. It contains much valuable information on the subject upon which it treats, and on the application of gas in aiding ventilation, and promoting the sanatory improvement of dwelling-houses and public buildings. It also furnishes an interesting and apparently impartial epitome of the various schemes for improvements in lighting, of which Manchester is at the present moment the seat, one of which, the Gillard light, is described in another column. We are, from another source, promised, at an early period, some more authentic details respecting this project, in which many well-informed and scientific people see the most formidable rival to coal gas, hitherto presented to the public. In the brilliant and permanent character of the light, all who have seen it unanimously agree; but the destructive effect upon the platinum wire, and the cost at which the hydrogen gas is produced, are matters where much difference of opinion exists. The charcoal used is the refuse of the pyroligneous acid manufactories, which is sold at a low rate, and materially diminishes the cost of the hydrogen gas; but whether it can be produced at the low rate anticipated by the talented inventor, is a problem which experience only can solve. As, however, there are no residuary products to dispose of, such as in Mr. White's case, to which, by assigning a visionary and speculative value, a fictitious estimate of the cost is obtained, there can be little difficulty in arriving at positive results.

From an enquiry made at the latest moment in the proper quarter, we understand that the return made by incorporated gas companies, in compliance with Mr. Hume's motion, will be published in about ten days. We hope, therefore, to be able to give it in our next.

Correspondence.

ON RESIN AND WATER GAS.

SIR,—Having engaged to erect gas works in a large city abroad, where coals are expensive, I have devoted much time and attention to the examination of Mr. White's gas, so as to enable me to decide whether the introduction of that, or of coal gas, will most conduce to the benefit of those gentlemen whose interests are placed in my hands; and although my conclusions differ materially from those of Dr. Fyfe, as expressed in your last number, still, as they are the result of a careful watching of the practical workings of Mr. White's newest and most improved apparatus, I cannot think that they will be uninteresting to your numerous scientific readers.

The principal sources of error in Dr. Fyfe's very elaborate and very interesting article are—First, He has tried his experiments with an apparatus erected under an old patent of Mr. White, since

* "Useful Hints on Ventilation," by W. Walker, engineer. J. T. Parkes, Manchester; and Simpkin, Marshall, and Co., London.

abandoned and replaced by an improved one under his new patent of 1849. Secondly, He has adopted a process essentially differing from that of Mr. White. His retort was "*stuffed with charcoal and scrap iron*," thus producing hydrogen by allowing the water to come in contact with the hot iron, whereas Mr. White decomposes water with heated charcoal alone, and *subsequently* passes the resulting gases through heated iron borings. Thirdly, He begs the whole question at issue, by assuming, throughout his argument that the gases produced by water, merely *mix* with those arising from the resin, instead of *chemically combining* with part of them in their nascent state, as I hope presently to prove that they do. Fully agreeing with the doctor, as I do, in "the extreme absurdity of putting any confidence in specific gravity alone as a test of the value of a gas for the purpose of illumination," curiously corroborated, at page 236 of the same number of your journal, by Professor Graham, who states, in his evidence on Croll's bill that, "unless an experiment on specific gravity is combined with an analysis it may lead to fallacious results," I will not imitate him in going at considerable length into this very question, but will simply state that I believe the average specific gravity of Mr. White's gas, after passing the lime purifiers, and being thereby deprived of most of its carbonic acid, slightly exceeds 700; to bring it to 924 would require an enormous quantity of carbonic acid.

But to proceed to Mr. White's process. My own observations, corroborated by the regular reports received from the towns and manufactories employing it, show that each 1 cwt. of resin, together with the water decomposed by half a bushel of charcoal, produces from 1500 to 1800 feet of gas, 4 gallons of resin oil, and two thirds of a gallon of naphtha; or, using all the oil over again, which makes the product clearer, 2500 to 2800 feet of gas with two thirds of a gallon of naphtha, the gas slightly exceeding our Manchester and Salford cannel gas in illuminating power, as tried against the same candle by the photometer. The last experiment I made with Mr. White's gas at Southport and the Salford gas, came so near as to consume in a minute, with the same candle respectively, sixty hundredths of a foot against sixty-two. This gas averaged 1500 feet of the water gas, added to 1000 of the resinous, which if it were, as Dr. Fyfe avers, a "mere mixture" of 1500 "*nil*," and "*worse than nil*," with 1000 "of illuminating power only equal to that of the best coal gas," it is very clear that our equation would stand, taking White's gas as W and the cannel gas as C, 2500 W = 1000 C, whereas proof easily attained shows W to be slightly superior to C. Mr. White's process is simple enough. His vertical six-foot retort, having a small quantity of iron borings at the bottom, is filled up with wood charcoal, which is, of course, brought to a high heat. A small stream of water falling upon the charcoal is, either upon its direct contact or subsequently as vapour, passing through 6 feet of carbon, converted into carbonic oxide, carbonic acid, hydrogen, and a little light carburetted hydrogen. Most of the carbonic acid subsequently yields an equivalent of its oxygen to the iron, and passes off as carbonic oxide. This action I at first doubted, and have not since verified by direct experiment, but have no doubt of the fact, as, whenever it is attempted to work the retort without the iron, the illuminating power of the gas, before it has reached the purifiers, is materially diminished. These mixed gases, C O, $C O^2$, H, and $C H^2$, are now conducted from the bottom of the vertical retort by a pipe into the horizontal retort, where they instantly come in contact with those gases, in the nascent state, which arise from the decomposition of a small stream of resin constantly falling on the red hot retort, namely, olifiant gas, light carburetted hydrogen, naphtha, and a little light oil, besides a further small portion of each of the other gases, C O, $C O^2$, and H. But now comes the main question, on which the merit of Mr. White's invention chiefly hinges; namely, Do these gases form a simple mixture, or does the large quantity of carbonic oxide, proceeding from the water retort, so combine with either carbon or naphtha as to obtain from them that illuminating power in which it is previously so confessedly deficient as almost to justify Dr. Fyfe in classing it as "*nil*" and "worse than nil?" Before watching Mr. White's operations I firmly believed in the former; facts have since compelled me to admit the latter. My reasons are these:—First, The known products of water decomposed by hot charcoal, if simply *mixed* with the equally well known products of resin decomposed by red hot iron, in equal proportions, could not possibly produce a gas of much more than half the illuminating power of good cannel gas, whereas they *do* produce one of superior power. Secondly, It has been found by repeated experiment that, if Mr. White's resin retort is worked without allowing the access of the water gas, it will be completely choked up with a deposit of carbon in four hours, whereas, when worked in the usual way, it is by no means choked in twelve hours, though it ought then to be cleaned. If no combination has taken place, where has all this carbon vanished to? Thirdly, The combination of carbonic oxide with naphtha is the very ground on which Mr. George Lowe took out his patent for naphthalising coal gas; indeed he has often told me that the more carbonic oxide the gas contained, the more highly illuminating power the naphthalised gas possess; for, according to his own original and forcible words, "though carbonic oxide possesses no illuminating power in itself, it is the best possible beast of burden for carrying it." On this very ground, too, I succeeded in lighting a town in Devonshire with gas produced from peat. The carbonization of peat yields little else than carbonic oxide and carbonic acid; and the power of illumination of the resulting gas is very feeble. Three tons of this peat converted into four tons by saturating it in coal tar yields a beautiful gas quite equal to that from the best cannel. Now, sir, you well know that the gas obtained from one ton of coal tar would be utterly inadequate to give illuminating power to the wretched stuff got from three tons of turf by mere mixture. The carbonic oxide, therefore, has so *combined* with carbon or naphtha as to obtain that power. At all events Mr. White *does* produce 2500 feet of good gas and two-thirds of a gallon of naphtha from each 1 cwt. of resin, and *does*, by means of his water gas, greatly lessen the deposit of carbon in the resin retort. These are assertions, Dr. Fyfe may say. They are; but easily proved or disproved by ocular demonstration; and I can only say to him and other doubters, Come and see. The spirited corporation of Manchester are at present allowing the erection of White's apparatus on their works, to try the economy of converting their immense production of tar into gas by its means, and the result of this trial will pretty much decide the merits of the "hydro carbon gas." I ought to add that I have given some time and attention to the examination of Mr. White's naphtha, hoping that it possessed the qualities of what is commonly called vegetable naphtha, and would dissolve shellac and the gums. In this I am disappointed. It has the properties of very good coal naphtha, and no more; dissolves caoutchouc with great avidity; but, containing scarcely a trace of oxygen, hardly touches shellac.

As my sole object is to give you the results of my personal observation of this gas, I will not enter into the details of Dr. Fyfe's paper further than to notice one or two points. In stating the loss during his own experiment in decomposing resin at three fifths of the weight of the resin used, he says, "there was no distillation of volatile oil, the loss must *therefore* have been occasioned by the deposit of carbon." Now, in all the statements of workings that I have read, each 1 cwt. of resin, besides the deposit of carbon, which is not large, passes into the condensers 3½ to 4 gallons of resin oil, two thirds of a gallon of naphtha, besides a little oil and pitch, which together will satisfactorily account for the so-called loss, without attributing it all to carbon deposited, or carbonic acid detained by the lime purifiers. The deposit of carbon is, as I have before stated, prevented from "choking up the retort" by the action of the water gas. The "kitchen grease, fat, dripping, &c.," I can say nothing about, as I never saw them used, and am confident that they have never been heard of in any Lancashire establishment employing White's gas, and suspect that they have not yet passed south of the Tweed, as resin oil is found to be the best solvent of resin. The question of the "gas produced being a mere *mixture* of resin gas with hydrogen, and variable proportions of carbonic oxide and carbonic acid," I have already discussed, and thereby shown that Dr. Fyfe's process of manufacturing the resin and water gases, the one after the other, could have no bearing on Mr. White's process of forcing a stream of the gases generated from the water upon the resin at the moment of its decomposition, and thereby acting upon the resulting gases in their nascent state. Being fully aware of Dr. Fyfe's well-earned celebrity as an analytic chemist, and the total impossibility of any undue bias in this matter, I am convinced that whenever he has the opportunity of witnessing the workings of Mr. White's perfected apparatus he will materially modify the views which he has adopted from viewing imperfect processes in rejected and imperfect apparatus. My object being, as before stated, simply to tell what I have seen, I have not noticed any of the statements of Mr. White in your journal or elsewhere, and have avoided touching the theoretic branch of the subject as foreign to that object; indeed, were I inclined to theoretic controversy, I should be too wary to enter the lists with so experienced and skilful an adversary as Dr. Fyfe.

Manchester, July 24, 1850. J. W. HODGETTS.

[Our intelligent correspondent prudently declines committing himself to the absurd statements promulgated by Mr. White, but rather confirms than disproves all *we* have said upon this subject. He admits the apparatus in which the experiments alluded to in the October Journal were made, to be "imperfect and rejected," and to be now replaced by an improved one, the specification of which was not enrolled till late in 1849. This form we presume has been adopted at Southport, and its superiority over that erected in London we alluded to in April last, though it is still in our opinion an imperfect apparatus, and one indicating a very crude acquaintance with the various plans which have been tried for generating gas from resin. That good gas may be made by this process, we have never denied; but the assertion that it can ever in this country compete with that produced from coal, reposes solely upon Mr. White's imaginary valuation of the residuary products, with which it is quite evident our correspondent differs. Mr. White estimated them to return 18s. 9d. out of every 21s. 6½d. expended in materials for producing his gas, whereas we have reason to believe that at the present time the whole of these products yielded at the Southport Gas Works since they were first set in operation (nine months ago) are still unsold, and unsaleable at anything like the prices asked for them. The making of gas from coal tar is quite another affair, and has always appeared to us to be the only useful object of Mr. White's patent.

Is our correspondent aware that the use of oil, fat, and similar products is distinctly claimed by the patentee as one of the economical advantages arising from the adoption of the process in private houses?]

Register of New Patents.

CHARLES LIZARS, of Paris, engineer, for "*improvements in Gas-meters.*" Patent dated December 15, 1849.—(Communication.)

The invention consists of a mode of arranging diaphragms in dry meters, and in a mode of constructing and arranging rotary and eccentric valves for gas-meters.

Fig 1 is a plan of the gas meter having the rotary valve applied thereto.

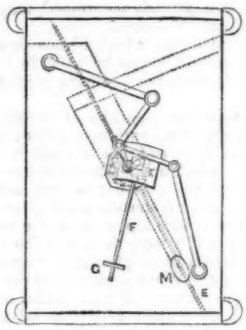
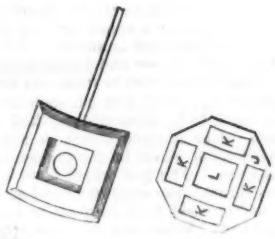


Fig. 1.

Fig. 2 shows the cover or top of the valve, which is moveable. Fig. 3, the lower part of the valve; and,



Figs. 2, 3.

Fig. 4 is a section of a gas-meter showing the arrangement of the diaphragms. In this figure, A, A, represent the conical compartments,

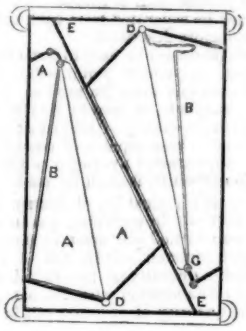


Fig. 4.

each divided by a diaphragm, B, B. C, C, are vertical rods, which serve as axes to the diaphragms. D, D, show the manner of attaching the diaphragms. E, is a partition which separates the conical compartments from each other. F, F, is a rod attached to the cover of the valve, and through which the movement of the cover takes place. G, G, is a slot for guiding the rod. H, H, is a crank, the movement of which communicates the movement to the top of the valve. I, is the top or cover. J, J, is the lower part of the valve, in which it will be seen there are five openings, four of which are marked K, and they communicate with the conical spaces on either side of the diaphragms, and the one marked L, communicates with the passage M, which is the opening of the pipe, through which the gas passes to the valve, and which pipe continues to the centre opening of the valve L, and conveys the gas to the openings, K, K, K, K, by means of the hollow part in the cover, fig. 2. The gas arriving in this hollow part of the cover, after passing through the pipe, M, descends by one or two of the openings, K, K, K, K, according to the position of the cover, when the gas is descending by one or two of the openings, K, K; and, entering the cones of the diaphragm or diaphragms on one side, the gas is forced out on the opposite side of the said diaphragms, and which has been measured through the other openings in the valve, K, K, and which has been left uncovered; this action is according to the position of the cover, fig. 2, each opening, K, K, K, K, serving alternately as inlet and outlet for the gas.

Having thus described the nature of the said invention, and the manner of performing the same, the inventor would have it understood that he did not confine himself to the precise details herein given, so long as the peculiar character of the invention be retained.

But what he claims is,

First, the mode of arranging diaphragms in dry meters; and,

Secondly, the mode of arranging and working the valves of gas-meters, as herein described.

READ HOLLIDAY, Huddersfield, for "*improvements in lamps.*" Patent dated February 11, 1850.

Mr. Holliday describes and claims several constructions of lamps in which light is produced by the ignition of vapour evolved by heating some suitable spirit supplied to the burner from a reservoir by capillary attraction.

The following are the principal features of novelty:—

1. The use of two discs of cork, or other non-conductor of heat, to maintain the burner-tube in position, and impede the transmission of its heat to the glass or earthenware reservoir of spirits.

2. The employment of a cock or tap situated below the jet orifice, for the purpose of regulating the supply of vapour to the burner. Several arrangements are specified to be used, instead of the cock, having for their object a like purpose, namely, the regulation of the supply of vapour. One consists of a fixed spike, which passes through an opening in the bottom of the burner tube, and, as the latter is moved up or down, increases or diminishes the size of the opening, and, therefore, of the supply of vapour. This spike also serves to clear the jet orifice. Or, a valve with a conical passage, which answers the double purpose of regulator and jet orifice, may be made use of.

3. The employment of perforated burners and wick tubes for the admission of air to the vapour.

4. Enlarging the lower part of the burner underneath which the wick is to be spread out, for the purpose of increasing the heated surface. Also, the use of a two-legged wick tube, through which the wick is drawn, or of two wicks for obtaining a like effect.

5. Various modifications of the preceding arrangements are described, whereby two or more burners are combined in one lamp, or the vapour supplied from two or more sources is centred in one light.

6. Regulating the admission of air to the vapour by making the burners to turn round the top of the wick tubes, and perforating such portions as are in contact with each other, so that when the holes are coincident the supply of air will be at its maximum, which will be gradually decreased as the burner is turned in one or other direction, and will be totally cut off when the perforations of one come opposite the unperforated portions of the other.

7. Several methods of constructing the burners and wick tubes, to admit of their being cast in one piece.

8. The adaptation of an adjusting screw to the wick tube, to compress the fibres between it and the side of the tube, for the purpose of regulating the supply of spirit to be vapourised.

9. The patentee proposes to employ an arrangement, similar to that last mentioned, in pressure spirit lamps, for the purpose of compressing more or less the fabric through which the spirit is generally filtered, and supplied from the reservoir to the burner.

JAMES WEBSTER, Leicester, engineer, for "*improvements in the production of gas for the purposes of light.*" Patent dated February, 12, 1850.

These improvements relate to an apparatus for the manufacture of coal or resin gas, which Mr. Webster terms "a domestic gas generator."

1. This "generator," when coal is used, consists of three retorts, supported in a suitable setting, two of which are charged with coal in the usual way, with the exception of a portion of the length near the end of each, which is separated from the rest by a perforated plate, and filled with pieces of iron and blacklead in powder. In the upper part of the setting there is a boiler, in which steam is generated at a pressure a little above that of the atmosphere. The steam is conducted by pipes into the small end chambers, and carries thence the blacklead into the retorts, depositing it upon their interior surfaces, and thereby preventing their being deteriorated by its action. The three retorts and boiler are heated by one furnace. The gaseous products and steam escape from these two retorts into the third, where such portions as have been transformed into gas are completely evolved, after which they pass into a condenser, where the steam is condensed, and the gas escapes to the gasometer.

2. The "generator" for resin gas is very similar to the preceding, with the exception that the third retort is filled with pieces of iron and blacklead in powder, into which steam is admitted from the boiler, passing thence into the other two retorts that are supplied with melted resin from a reservoir in the upper part of the setting. The steam and gas then pass to a condenser, where the former is condensed, after which the latter escapes to a gasometer.

Claims.—1. The improvements in the manufacture of gas from coal, as described.

2. The improvements in the manufacture of gas from resin, as described.

GEORGE HOLWORTHY PALMER, of Westbourn-villas, Harrow-road, Middlesex, civil engineer; and JOSHUA HORTON, of Ætna steam engine boiler and gasometer manufactory, Smethwick, near Birmingham, for "*improvements in the arrangement and construction of gasholders.*" Patent dated February 20, 1850.

The object of this patent is to dispense with the present cumbrous and expensive mode of sustaining the tops of gasholders, by means of braces, trusses, girders, &c.

The top is made horizontal, and consists of an interior curb or circular support, formed of two parts of strong double 4-inch iron, bolted together, in addition to the outer curb at present in use. From the centre plate to the circumference, which is formed of four-guage iron, there extend radial plates or arms of the same thickness, and varying in number with the size of the holder (say for a holder

100 feet in diameter, twelve radial plates), the intermediate spaces being covered with plate iron of twelve guage, firmly bolted to the inner double and outer single curbs, and to an equilibrium block of teak placed between them. When the holder is afloat, the top will be raised by the pressure of the gas contained in the holder, and will thus prevent the strain thereby produced from falling too much on the outer curbs. To retain and discharge the rain which might effect a lodgment when the holder is not in use and the top deflected, a self-acting hydraulic cup is fitted to the centre of the top. Or, to obviate this deflection altogether, a wooden framework may be raised inside, on which the top may rest when the holder is not in use. By not rivetting the side plates of the receiver to the lateral supports, the downward strain of the top and lateral supports on the side is thrown on to the foot curb. Corresponding to each arm in the top, a plate of metal of four guage is fixed in the side casing, and the intermediate space filled in with No. 10 guage. To these thicker plates are attached the supports for pulleys, &c., which are employed as in the ordinary description of gas holder.

Claims.—1. The employment of the inner double curb and equilibrium blocks, as above described.

2. The arrangement before described, whereby the strain on the side of the holder is thrown on the foot curbs.

3. The combination and application of these arrangements, as a whole, but not as regards each individual part, some of them having been previously adopted.

William Cormack, of King-street, Dunston-road, Haggerstone, Middlesex, chemist, for "*improvements in purifying gas, also applicable to obtaining certain products or materials from gas-water and other similar fluids.*" Patent dated February 21, 1850.

Specification.

My invention consists of a mode or modes of applying certain materials, hereinafter described, to purify or free coal gas (such as commonly burnt for the purpose of illumination) from the ammonia and sulphur or sulphuretted hydrogen (either combined or otherwise), by which it is usually contaminated before the purification thereof. And such materials are applicable in obtaining or separating certain products, or materials, not only from gas, but also from gas water, or other similar fluids holding hydrosulphuret of ammonia, or ammonia and sulphuretted hydrogen in solution.

The materials which I use for these purposes are two salts of the descriptions following, that is to say, the one of such materials is a metallic salt, not a chloride, the base of which is capable of being precipitated in the state of a metallic sulphuret by the sulphur or sulphuretted hydrogen contained amongst the impurities of the gas, and the other of such materials is such a salt, of the description commonly called muriates, as shall be capable of decomposing the ammoniacal salt resulting from the combination of ammonia with the acid of the other salt which may be used as one of the materials.

The salt which, in consequence of its cheapness, I prefer to use as the material for taking up or abstracting the sulphur or sulphuretted hydrogen from the gas or other fluid, is protosulphate of iron, commonly called green sulphate of iron, or green copperas; but any other of the soluble metallic salts which are sufficiently cheap to be used for this purpose, and the bases of which are known to be *capable* of being precipitated in the state of metallic sulphurets, by the sulphur or sulphuretted hydrogen contained amongst the impurities of gas, may be used in lieu of the protosulphate of iron.

The salt which, on account of its cheapness, I prefer to use as the material for decomposing the ammoniacal salt resulting from the combination of ammonia with the acid of the other salt, which may be used as one of the materials, is chloride of sodium, usually called muriate of soda, or common salt; but any other cheap soluble salt may be used, which is of the description commonly called muriates, and which is *known* to be capable of producing such decomposition as lastly hereinbefore mentioned.

To prevent confusion, I will describe my said invention as performed by means of those materials or salts, which, by reason of their cheapness, I prefer to use.

When I intend to use the materials in a state of solution for purifying gas, I take about 140 lbs. of protosulphate of iron and seventy-four pounds of common salt, and dissolve them in about 150 gallons of water. The protosulphate of iron in this mixture being in excess, for the reason hereinafter mentioned, I pour this solution into a vessel, such as usually called a purifier, and then cause the gas to pass through the liquid in the like manner as the gas is caused to pass through milk of lime in the well-known process of wet lime purification.

The gas, in passing through this purifier, will be purified or freed from sulphur and ammonia, both of those materials being abstracted from it, and absorbed by the solution through which it passes.

This action of the solution upon the gas passing through it, will continue until the dissolved materials have become decomposed or exhausted, when it will become incapable of purifying any more gas, and this exhaustion of the materials may be ascertained by means of the well-known tests of acetate of lead and turmeric paper.

When the purifying liquor has thus become exhausted, the contents of the purifier are to be withdrawn, and replaced by a fresh quantity of a similar solution.

The exhausted purifying liquor thus withdrawn will contain *sal-ammoniac* and sulphate of soda in solution, and an insoluble sediment (I presume to be sulphuret of iron) which, after the liquor has stood some time, will settle and be deposited at the bottom of the vessel in which it may be contained.

For the purpose of obtaining the sal-ammoniac and sulphate of soda separate from each other, the clear liquor should be decanted from the deposited sediment just mentioned, and put into evaporating pans, and after the superfluous water has been expelled by heat (which is known by a pellicle beginning to form at the surface of the liquid), the liquid is to be drawn off into coolers, and in due time the sal-ammoniac will crystallize, and the sulphate of soda remaining in solution is to be decanted or drained from the crystals of sal-ammonia.

This is a well-known process for separating these two salts, and need not be further described, as it forms no part of my invention. But I may observe, that I deem it inexpedient to allow the liquor in the coolers just mentioned to cool below a temperature of 76° of Fahrenheit's thermometer, lest some of the sulphate of soda should crystallize, and thus become mixed with the sal-ammoniac and deteriorate that material.

The sulphate of soda remaining in the solution after the separation of the sal-ammoniac may also be obtained by crystallization in the usual manner, if desired.

The insoluble sulphuret, already mentioned, may also be dried and obtained in a separate state, if desired.

Instead of using the materials which I have described in a state of solution for purifying gas, they may be used in a manner similar to that in which lime is used in the ordinary process of dry lime purification.

For this purpose I take like quantities of the protosulphate of iron and common salt, as already mentioned, reduce them to a state of powder, and mix them with two bushels and a half of granulated animal or vegetable charcoal, and sufficient water (from about ten to fifteen gallons) to give the mixture a soft consistence. I then thoroughly incorporate these materials together so as to be of an uniform consistence, and introduce a portion of the composition into the purifier, in like manner as if it were lime, and the gas passing through it will be purified or freed from sulphur and ammonia, in like manner as hereinbefore described. When a portion of this purifying mixture has been exhausted, the contents of the purifier must be withdrawn, and they will be found to contain as before sal-ammoniac, sulphate of soda, and an insoluble sulphuret, but mixed with the charcoal which is used in performing the process in this way.

To the materials withdrawn from the purifier should be added sufficient water to dissolve the sal-ammoniac and sulphate of soda, and the solution decanted from the insoluble matters, after which the two salts may be obtained in like manner as hereinbefore described.

The salts or materials which I have above described may also be employed in any other convenient manner for the purpose of purifying or freeing gas from sulphur and ammonia. Thus, for example, a solution of the protosulphate of iron and common salt, in the beforementioned proportion, may be used in the following manner:—

Take a sufficient quantity of wool or flock, such as used in making bed mattresses, and cause it to be thoroughly soaked with the purifying liquid, and then place it upon sieves in a purifier, in like manner as lime is placed upon sieves in the process of purifying gas by the dry lime purification. The gas which is to be purified must then be caused to pass through the saturated wool or flock, by which means it will be purified or freed from sulphur and ammonia in like manner as before described. When this mode of applying the purifying liquid is adopted, such a stream of the purifying liquid may be caused to flow down through the purifier as will be sufficient to keep the layers of wool or flock moistened with the quantity of that liquid which shall be requisite to purify the gas passing through the purifier.

The products of this process will, of course, be the same as already mentioned, and they may be separated from each other, and obtained in like manner as hereinbefore described.

If any other metallic salt should be used in lieu of the protosulphate of iron in purifying gas, in manner hereinbefore described, such a quantity of the substituted salt must be used as shall be equivalent to the quantity of protosulphate of iron in lieu of which it shall be used; that is to say, such a quantity of the substituted salt must be used as shall have a metallic base capable of combining with the like quantity of sulphur or sulphuretted hydrogen as the base of the protosulphate of iron in lieu of which it shall be used.

And if any other salt, which must be, of course, a muriate, should be used in lieu of common salt in purifying gas in manner aforesaid, such a quantity of the substituted salt must be used as shall be equivalent to the quantity of common salt in lieu of which it shall be used, that is to say, such a quantity of the substituted salt must be used as shall contain, in combination with its base, the same quantity of chlorine as the quantity of common salt in lieu of which it shall be used,

I have stated the proportions of salts which I deem to be the best to be used in purifying gas of the description most generally made, but the quantities and proportions of the impurities contained in gas depend, in a great measure, at least, upon the quality and description of coal from which it is obtained; and, therefore, it must be understood that the proportions of the salts may be varied or modified as may be requisite according to circumstances. In the proportions of the materials which I have hereinbefore mentioned, the protosulphate of iron, or other salt used in lieu of it, will be in considerable excess, for the proportions of protosulphate of iron and common salt proper for decomposing hydrosulphuret of ammonia are seventy-six parts by weight of protosulphate of iron to sixty parts by weight of common salt. I believe, judging from experience, that an excess of the metallic salt such as I have mentioned will be found useful in purifying gas, but I do not intend to say that such an excess is absolutely necessary in every case. And it is to be observed that a small excess of either of the two salts which may be used in purifying gas will not prevent or retard the purification of the gas, and the chief, if not the only, evil will be that the portion of salt which may be in excess will be mixed with the products or materials remaining in the purifier when the purifying powers of the mixture of salts has been exhausted.

And it must also be observed that if any such other salts as aforesaid shall be substituted, either for protosulphate of iron or common salt used in purifying gas in manner aforesaid, although sal-ammoniac will still be produced, the other products or materials resulting from the performance of the process of purifying, or some of them, will be different. And such other products or materials which shall remain when the mixture of purifying materials shall have become exhausted may be separated by evaporation and crystallization, or in any other

convenient manner; but the mode of separating such materials (as already stated) forms no part of my said invention.

Gas purified in the manner already described may be purified from carbonic acid, by causing it also to pass through lime; but such further purifying process forms no part of my invention.

The compound or combination of materials which I have above described for purifying gas, and obtaining various products or materials therefrom as aforesaid, may also be used or applied in obtaining or separating sulphur or sulphuretted hydrogen and ammonia from gas water or ammoniacal liquor, or from any other liquid containing those materials.

For this purpose I take protosulphate of iron and common salt in the before-mentioned proportions, and either in a state of solution or powdered and thoroughly mixed together, and add it gradually to the liquid to be operated upon, continuing from time to time to add further portions of the materials until the whole of the sulphur or sulphuretted hydrogen and ammonia have been separated, which may be ascertained by means of acetate of lead and turmeric paper, the tests already mentioned. The liquid may then be decanted from the insoluble material which will have been formed, and the soluble salts may be separated from each other, and obtained in like manner as already described.

And for the purpose of obtaining or separating sulphur or sulphuretted hydrogen and ammonia (in a combined state) from gas water, ammoniacal liquor, or any such other liquid as aforesaid, other salts may be substituted for the protosulphate of iron and common salt respectively, in like manner as hereinbefore mentioned, and the products or materials resulting from the performance of every such process may also be separated in like manner as hereinbefore described or mentioned.

Having now described the nature of my said invention, and the manner in which the same is to be performed, I hereby declare that I claim as of my invention the application of a combination or joint application of such salts or materials as aforesaid, in the purifying or freeing gas from sulphur and ammonia in manner hereinbefore described, and also in the obtaining or separating such products or materials as aforesaid from gas, gas water, ammoniacal liquor, or other liquid containing sulphur and ammonia as aforesaid.

Miscellaneous News.

GREAT CENTRAL GAS CONSUMERS' COMPANY.

EXTRAORDINARY GENERAL MEETINGS.

An extraordinary general meeting of the shareholders of this company was held at the London Tavern on the 14th ult., for the purpose of taking into consideration the propriety of authorising the board of directors, under the 40th section of the company's deed of incorporation, to borrow a sum of money not exceeding £25,000 upon mortgage of the company's works, mains, and pipes, at a rate not exceeding five per cent. In the absence of the chairman and deputy chairman, the chair was taken by Francis Bennoch, Esq.

The Chairman, in opening the proceedings of the meeting, stated that the company had now surmounted all its formidable opposition, and that there was not the smallest doubt but that at the period fixed by the company they would be able to supply gas to those persons who had contracted to take it of them.

The advertisement convening the meeting having been read,

Mr. Charles Pearson read the following report:—

"Gentlemen,—We have the satisfaction to inform you that the erection of the manufactory and the laying of the company's mains are proceeding with rapidity, and, according to the report of the engineer, they will be completed in ample time to be put in working order, according to the conditions of our contract, before the 29th of September, when we shall commence supplying our customers. Including several streets and lanes, where the works were of the most difficult character, the engineer reports that more than one half of the entire city has been laid, some inconvenience has been necessarily occasioned to the inhabitants; but having selected for our operations the season of the year when the traffic in the streets is comparatively small, and, having satisfied the public mind, from the declarations and actions of the old City Gas Companies, that it was impossible to break up their monopoly, and to secure for the City an abundant supply of this essential article of trading and domestic consumption, without the introduction of a new company, our superintendents engaged in laying the pipes report that they have everywhere been received by the consumers with the most hearty welcome. The inhabitants have co-operated everywhere with us in lessening the amount of inconvenience when it was capable of diminution, and have cheerfully borne it when it was not.

"The public prints have made the shareholders acquainted with the fierce opposition this company had to encounter in laying their mains across the canal-bridge leading from Bow-common.

"This opposition bore upon the surface the appearance of having been occasioned by the gas companies supplying that district; the directors have reason, however, for believing that the surface of the stream did but conceal the under current of a more determined and more formidable character.

"Dark and mysterious rumours had for some months been circulated by the partizans of the old companies, that the Great Central would not be permitted to lay down pipes to bring the gas from their works to the City; and at various meetings of the local boards of the district, where permission was required, the solicitor of the City Gas Company appeared, to endeavour, as he had previously done at the vestry at Camden-town, to induce them to refuse their consent.

"Mr. Tyrrell's exertions were without effect. At three of the local boards the assent was unanimously given, and at the other by a majority of sixteen to two. On Wednesday last the contractors commenced the laying of their pipes under the footway across one of the canal bridges, for the purpose of forming the communication between the City and the company's works.

"The Battle of the Bridges has been chronicled by the daily press, and need not be here repeated; it is sufficient to say that, clothed with justice, armed by law, and backed by the parochial authorities and the entire force of public opinion, it was not likely that this company would succumb to lawless force. The directors addressed a letter of remonstrance to the Commercial Company, in whose names the proceedings had been taken. Since the receipt of this letter they have gracefully withdrawn from the unseemly contest, and have left the company's contractors in the undisputed possession of the field, and they are pursuing their operations in peace.

"At the meeting before the magistrates of the parties ostensibly engaged in the conflict, the Agent of the City Gas Company, like the stormy petrel, was, as usual, hovering around the scene, but as soon as the tempest subsided he disappeared.

"The directors trust they may now congratulate their shareholders with the certainty of being allowed to prosecute their labours to a successful issue amid a peaceful calm, which it will not be permitted to any bird of ill omen hereafter to disturb.

"The state of the share and capital account of the company is as satisfactory as the progress of the works. The whole of the 15,000 shares authorised by the company to be issued, have been appropriated as follows:—

"To subscribers under the parliamentary contract who have not executed the incorporation deed	1,167
"Contractors in respect of unexecuted works	1,500
"Shareholders upon whom calls have been made, including 1,500 contractors' shares for works executed	12,333
Shares	15,000

SHARE ACCOUNT.

"Amount of shares upon which calls are payable, £10 per share, 12,333			£123,330	0 0
"Received on account	£85,445	0 0		
"To be received	37,885	0 0		
			£123,330	0 0

CASH ACCOUNT.

"Amount of preliminary expenses, including two parliamentary contests, law, expenses of deeds, and all other charges of forming the company, procuring consumers' contracts, &c.	£15,179	1	4
"Amount of payments to contractors for buildings, works, mains, pipes, services, meters, and land	51,332	10	10
"Banker's balance	18,933	10	1
	£85,445	2	3

"The directors have the satisfaction to state they have every reason for believing that the execution of the works will be completed within the limits of Mr. Croll's estimate.

"If the calls upon the whole of the appropriated shares had been paid up, the capital would have been abundantly sufficient to meet the anticipated expenditure, without any further issue of shares, and without the exercise of the power of borrowing upon mortgage, which, to the extent of £25,000, is given by the Incorporation Deed.

"Nothing beyond the deposit has yet been paid upon the 1167 shares referred to in the account, as held by persons who have signed the Parliamentary Deed only, and there are likewise shares upon which, for various reasons, the first call of £1 per share has been alone paid. All the parties are liable upon their covenant to actions for the full amount of their shares, and the shares are also liable to forfeiture; but as the shares of the Company are in demand, the directors have determined to give to the parties entitled to them the option of retaining them, paying up the calls forthwith, or of surrendering them upon payment of their proportion per share of the preliminary expenses. Any portion that may be relinquished will be offered to the existing shareholders pro rata.

"The directors are restrained by the Deed of Incorporation from giving any bonds, bills, or notes, or from borrowing money, or to contract any trade debts to bind the shareholders; they, therefore, desire to be empowered to borrow any sum not exceeding £25,000, upon mortgage at 4 or 5 per cent., for floating capital, in case they may require any temporary advance until the calls upon the deficient shares shall be paid up.

"August 14, 1850. (Signed) Francis Bennoch, Chairman."

The hon. gentleman then proceeded to congratulate the meeting on the favourable termination of the battle of the bridges, referred to in the report. The mode in which that affair had been terminated was by a freak of a team of horses, which had most unaccountably to him galloped off with the pipes of the old company to an adjoining field. The directors of the Commercial Gas Company had now, however, given an assurance that they should not meet with any further molestation on their part. The reason why the directors were anxious to obtain power to borrow the sum of £25,000. was that their hands were tied by the deeds of the company. They were prevented from doing that which other companies were able to do, viz., giving bills or bonds for the payment of any expenses which it might be necessary to incur in the prosecution of their works, and it was, therefore, necessary that they should have power, should the occurrence arise, to borrow some amount of money on the security of the property of the company. At the same time, he would state that it was quite possible that they might never have occasion to exercise that power. If the 1100 shares referred to in the report were to be paid up, there would be no necessity for borrowing at all. With respect to those shares which were in arrear, the directors intended to call upon the holders of them either to pay up the calls or forfeit the shares; if they adopted the first alternative there would be no necessity for borrowing, and if they forfeited the shares they would be divided among the present shareholders, who would, of course, have the benefit of the amount which the present holders had already paid upon them. He was happy, also, to inform the shareholders that the directors had come to the resolution not to make any further application for an act of Parliament. The capital of the company had been obtained, the pipes and mains of the company had been nearly all laid down, and they possessed nearly all the advantages which they could enjoy under an act of Parliament. The company had entered into agreements with the commissioners of sewers to supply good and cheap light to the public; they were determined to adhere to their agreement; but if the commissioners of sewers considered that it was necessary to bind them by an act of Parliament to the discharge of duties, which they were ready and willing to fulfil under their present agreements, they might easily introduce some provisions to that effect in a public bill, which could be passed at a comparatively trifling expense. Mr. Croll, the engineer, had stated that, from his present experience of the works, he believed that the whole of the

works would be completed for a sum considerably less than that which he had originally stated. He was heartily glad to witness the favourable position of a company of which he was the parent, and should ever continue to feel a sincere interest in its welfare and prosperity.

Mr. HENRY MASSEY then moved the adoption of the report, which, having been seconded, was unanimously agreed to.

Mr. HALL (of Bishopsgate-street) moved "That the sum of £25,000, in one or more sum or sums, be raised by way of loan, if the directors should deem it necessary, at a rate of interest not exceeding 5 per cent. per annum, for the purposes of the company, on the security of the premises upon which the business of the company is intended to be carried on, or of any other real estate which may belong to the company, and the gas pipes, machinery, and works thereof; and that upon the effecting of any and every such security, the particular property to be comprised therein, and the terms and provisions to be inserted in the deed or deeds, instrument or instruments, upon the security of which the sum or sums borrowed shall be raised; and all other matters in relation thereto shall be fixed and determined by the board of directors."

Mr. LARBY felt great pleasure in seconding the motion.

Mr. PEARSON stated, in answer to what had been said respecting the capital of the City Gas Company, that upon its formation the capital of the company was £40,000, that with that sum the company erected its works and laid down pipes from Temple-bar to St. Paul's, by the Post-office, and to a part of Clerkenwell. Some time after its formation the company applied for power to increase its capital to £200,000, for the purpose of enlarging its works and extending its pipes into Westminster and Southwark. In 1825 the secretary to the company stated, in his examination before a committee of the House of Commons, when opposing the Oil Gas Company, that the capital of the company was £141,200. That he (Mr. Pearson) believed to be the whole amount of capital raised by that company. Upon that sum they paid a dividend, not of 10 per cent., but of £10 per share of £70 or £80, with bonuses about every three years of something like 22 per cent. Some idea might, therefore, be formed of the profits made by the company out of the gas consumers of London. Another test of the profits of the company was to be found in the price at which the shares sold in the market; shares with £70 paid up having been sold some time since for £300. It was perfectly idle for the old company to threaten to enter into competition with the new one, for if they were to steal the gas they would soon drive them out of the field. The land upon which the works of this company were erected was freehold, while the old company had to pay £2000 a year rent for their premises, their manufacturing works were superannuated, their pipes were defective, leaky, old, and paralytic, their capital of £600,000 was an idle boast, and any attempt on their part to enter into competition would only hasten their ruin. Mr. Croll had also informed the directors that the number of services already laid down by the company considerably exceeded the number of those which had originally agreed to take the gas from the company; and he felt confident that, by the end of the next year, they would be able to supply the gas at 3s. 4d. instead of 4s. per thousand, as was originally intended. So confident was the engineer of the complete success of the company, that he had offered, if it did not pay five per cent. by Christmas, 1851, to give up one-half of his commission, and if it did not pay 10 per cent. in 1852, he would give up the entire of it.

The resolution was then unanimously agreed to.

At the request of a shareholder, Mr. Wire read the 97th clause of the deed of the company, limiting the powers of the directors, and prohibiting them from issuing any bills of exchange or bonds on the company's account.

A SHAREHOLDER wished to know when the company would be prepared to supply the gas?

The CHAIRMAN stated there was no doubt whatever but that they would be ready to supply the public by the period originally stipulated, the 29th of September. The pipes of the company had been laid down in a less period than had been anticipated, the works at Bow were nearly completed and he believed that they would be ready even a fortnight before the time he had mentioned.

Mr. VENABLES stated that, to a man, the gas consumers of Newgate-market, although not all shareholders, had determined to support the new company, and were resolved, even if the old company should lower its prices to 1s. 6d. or 2s., that they would still feel bound to the new company.

Mr. WALTON then moved, "That this meeting desires to express its cordial and unfeigned confidence in the directors, and to offer its hearty thanks to them and to Mr. Pearson, the late chairman, for his unwearied exertions in procuring cheap and good gas for the citizens."

Mr. VENABLES seconded it, and the motion was carried unanimously read with loud cheers.

The CHAIRMAN returned thanks on behalf of himself and brother directors, and the meeting broke up.—(*Chronicle.*)

WEDNESDAY, SEPTEMBER 5.

Another extraordinary general meeting of this company was this day held at the City of London Tavern, for the purpose of confirming the resolution passed at the meeting of the 14th ult., giving authority to the directors to borrow £25,000 on mortgage of the company's property.

In the absence of Mr. DAKIN, the chairman, the deputy chairman, Mr. GABRIEL, was called upon to preside.

Mr. WIRE having read the advertisement calling the meeting,

Mr. LARBY and Mr. WALTERS, the mover and seconder of the original resolution, severally moved and seconded the vote of confirmation, which was unanimously adopted by the meeting.

Mr. C. PEARSON was then called upon by the chairman to address the meeting. In the course of his observations he read extracts from the subscribers' deed and from the stamped contracts, signed by the consumers, to show that they were legally bound to fulfil their obligations, to pay their calls, and take their supply of gas for five years. Mr. Pearson said he would pledge his reputation, as a solicitor of thirty years' practice, that the obligation in their deeds could be enforced, if needful; but that there would be no necessity to resort to adverse proceedings, might be inferred from the conduct of the parties to these contracts, and from the attendance at the meeting that day. The presence of 500 out of 700 shareholders, all of them men of business, at a meeting in the middle of the day, and in the month of September, must afford the best evidence that their zeal had not abated in the good cause. He should propose, at the instance of the board of directors, the appointment of a committee of shareholders and consumers to co-operate with the directors in applying that gentle pressure which might, perhaps, be required to stimulate tardy shareholders or backward contractors to discharge those duties which, as honourable men, they were bound to adhere to, totally irrespective of the legal obligations which their signed deed imposed upon them. He believed that the labours of this committee would be light and temporary. He was happy to say that the great bulk of both shareholders and consumers had redeemed their pledges—but still there were in both classes some few who had neglected to perform this duty. The directors did not like, from a sense of delicacy, to make a return to the meeting of the names of the gentlemen who were in this predicament, but, if such a committee as he proposed were appointed, the directors would lay the list before them, and they could deal with the whole question as their judgment should dictate. A body of independent shareholders and consumers would shame their brethren into compliance with their legal and moral obligations better than a whole army of attorneys. In common parlance they were in the habit of designating an honourable man as one whose word was as good as his bond or deed; but what would be thought of a man's word if his solemnly-recorded, signed, and sealed deed failed to bind him? If a man bound himself to do an act, and others, from a confidence in his word and deed, took upon themselves similar obligations, he was bound, by every principal of honour as well as law, to carry out his engagements. He (Mr. Pearson) repeated that the request of the directors to the shareholders to nominate the proposed committee ought not to be interpreted into an admission that either shareholders or consumers had been shrinking from their responsibility. The contrary was the fact. *Ex pede Herculem.* You could fairly predicate what would be the number of consumers and the amount of their consumption throughout the city by the number of services already laid on in the several districts in which the company's pipes had been laid. The company's engineer had reported to the board that the returns of the services laid on warranted the conviction that his estimates of costs and distribution would be justified by immediate experience, and that the dividend of ten per cent. would be received, even if the company should at once commence the supply at 3s. 4d. per thousand. The directors had come to the resolution that they would commence their supply by charging the estimated price of 4s. per thousand, as originally proposed, but they pledged themselves that, to those consumers who opened accounts with the company on or before the 29th of the present month, they would return on the following September eightpence per thousand cubic feet on the year's consumption, provided it should prove, as Mr. Croll's estimate stated, that, after paying a fair dividend on capital, it could be afforded at that price. Mr. Pearson then read from the daily papers the report of a statement made by Mr. Timothy Tyrrell, that the City Gas Company, having a capital of £600,000, would reduce their gas from 3s. 6d. to 3s., or 2s. 6d. per thousand cubic feet, so as to undersell the Consumers' Company, who, having a capital of only £150,000, would soon be ruined in the contest. Idle and absurd braggadocia as was this declaration, it would serve to show the desperate determination of the old gas companies, as straws floating in the wind indicated the coming hurricane. It would be recollected that this statement appeared in the papers more than three weeks ago, without having been since repudiated by either of the companies who enjoyed the inestimable benefit of Mr. Tyrrell's bold and adventurous counsels. That gentleman's declaration must, therefore, be taken as a manifesto of the determination of the old companies to provoke a death struggle with the consumers, by a system of retaliatory reduction, which they vainly thought would end in the extinguishment of their company, and lead to the resumption of their old monopoly, when they might recompense themselves for their temporary losses in the contest by levying upon the consumers their old exorbitant charge. The Consumers' Company would not gratify Mr. Tyrrell by accepting his challenge, because the system of warfare he proposed was equally unprincipled and absurd. If the directors thought proper to engage in such a conflict they would have no reason to fear its ultimate issue, even assuming Mr. Tyrrell's statement of the relative position of the companies was as he described it. He (Mr. Pearson) had never been favourable to the system of fierce competition, which it had been too much the fashion in the present day to pursue, without regard to its consequences upon individual interests affected by it. He had always contended that gas, like every other article, should be supplied of a fair merchantable quality at a fair tradesmanlike price. Live and let live should be the order of the day. If from the unsuitable situation and construction of their works, and from the defective and leaky state of their mains and pipes, the old companies are not in a condition to maintain a fair and honest competition, he should repeat what he had said to them in print above a year since, they would find it to their interest to give up business like the old gas companies at Plymouth, Bradford, Devonport, Worcester, and other places, and resign to their more youthful and more energetic competitors, upon such fair terms as independent and impartial mutual friends might determine.

Mr. WALTER moved and Mr. FICKLING seconded the following resolution:—

"That at the request of the directors, an acting committee of shareholders and consumers be appointed to communicate and co-operate with

the board in promoting the general interests of the company amongst their brother consumers."

An acting committee of twenty consumers from the different wards of the City was then appointed, with power to add to their number.

The meeting then broke up.

CITY COURT OF SEWERS.

A special court was held in the Guildhall, on Tuesday, the 3rd inst., Mr. Deputy Peacock in the chair, in consequence of a requisition "to take into consideration the obstructions caused in the principal streets of the city by the contractors of the Great Central Gas Consumers' Company."

Mr. Deputy Lott commenced the business upon which the court had assembled. As the court had sanctioned the laying down of mains and pipes by the new company, upon the application for permission, it would have been most satisfactory to him if the indulgence had been acted upon in such a manner as to prevent any occasion for complaint; but he regretted that the direct and insolent violation of the rules prescribed by the court to the company had excited such a feeling throughout the various portions of his ward, the condition of which he understood accurately represented that of other districts, as to render an early meeting of the commissioners indispensable. He had hoped that the Great Central Gas Consumers' Company would have acted in compliance with the modified regulations of the commissioners, instead of having most recklessly abused the confidence placed in the assurance, that care should be taken to make the disturbance of the pavements in the streets the occasion of as little inconvenience as possible to the inhabitants. That hope had been disappointed. The streets in his ward were in such a condition in consequence of the operations which were carried on daily, as well as nightly, contrary to the spirit of the regulation laid down, that the inhabitants had frequently to encounter great difficulty in getting out of or into their own houses. He had not gone about seeking for matter of complaint. He had, as deputy of the ward, received communications, one or two of which he would read, to show, upon the authority of the sufferers, their strong grounds of expostulation. Mr. Lott then read the following letters:—

"7, Budge-row, Sept. 3.

"Sir,—I write to you, as deputy of the ward, to complain of the annoyance and inconvenience that I am put to by the workmen of the Central Gas Consumers' Company, who yesterday morning pulled up the pavement in Budge-row for the purpose of placing down gas pipes, in doing which they cut off the pipe that conveys the water into my house before the supply of yesterday could be obtained, and in that state left it last night at six o'clock, and have not been to work since. The foot-pavement in Budge-row is very narrow, and the stones taken up have been so placed that there remains in some places little more than a foot in width to walk upon, consequently persons passing have to turn from the pavement to the middle of the road, which is also in a very bad state. All carriage thoroughfare is stopped. When great alterations are to be made we must expect inconvenience; but what I complain of is, that those who should watch over these matters, and who, in the city generally, do so, appear to me in this business utterly regardless of the trouble and annoyance which the inhabitants are put to. I, perhaps, ought to state that, as an importer of leeches, it is very important that I should not be kept longer without water than is really necessary. If you can do anything to lessen the inconvenience that I, with my fellow-parishioners, am subjected to, you will much oblige, "Sir, your obedient servant,

"To Mr. Deputy Lott." "GEORGE CULLEN.

"Watling-street, Thursday evening.

"Dear Sir,—I shall feel obliged if you could interfere to get this side of the street better filled in and levelled, or we shall have an upset, as there was by Mr. Smith in Bow-lane this evening; and, being so narrow, if we do, some of our fronts will be smashed in, and then, besides the nuisance, who is to pay for it? The fault will not be in the driver. I am going out of town, but I fear to do so. "I am, &c.,

"Mr. Deputy Lott." "W. E. LEGG.

The representation made in these letters faithfully described the state of a great variety of places, and the contractors did not even exempt Sundays from the period of their active operations. Mr. Deputy Lott proceeded at considerable length to specify the nature and extent of the nuisance which at present exists in the city of London, but left it to some other member of the court to propose a motion calculated to remedy the public inconvenience.

The CHAIRMAN hoped that somebody would submit a resolution, in order to make it appear why the court was called at so unseasonable a time.

Mr. H. L. TAYLOR said, what those who had caused the meeting to be called wished to ascertain was, whether the orders of the commissioners had been complied with. If such had been the case, then, as a matter of course, there could be no cause for censure or complaint; but if the rules had been transgressed, it became their duty to prevent any future violation.

Mr. WATSON then handed in a memorial from some of the inhabitants of Cheap ward, complaining of the conduct of the Great Central Gas Consumers' Company, in allowing their works to be carried on by day as well as by night, to the serious obstruction of their business. He stated, that the accumulation of filth before the doors of the inhabitants formed no small addition to the nuisance arising from the general disturbance of the pavement, and was of opinion that the application of the memorialists, to the effect of preventing the night operations from being continued, should be agreed to.

The CHAIRMAN again complained that there was no motion before the court.

Several commissioners started up, and said it was monstrous to endeavour to throw impediments in the way of the praiseworthy exertions of the company; at the same time, all must be aware of the impossibility of carrying out a vast enterprise, fraught with great public advantage, without causing public inconvenience.

The CHAIRMAN then announced that he had received certain communications from the Great Central Gas Consumers' Company.

Mr. H. L. TAYLOR strenuously opposed the reading of these communications, which he had no doubt were intended to benefit the views of the company by their appearance in print, and could have nothing to do with the business upon which the court had been called together. He was ready prove that the company had violated the contract they had entered into in the most impudent manner. That was the business upon which they had assembled.

The CHAIRMAN said it was rather extraordinary to call a meeting in opposition to the company, and to object to hear any statement which the company might have to make in defence or justification. He believed the company had done what they ought not to have done, but the common right of being heard ought not to be denied them.

It was then decided, by show of hands, that the communications should be read. They were as follows:—

"TO THE WORSHIPFUL THE COURT OF SEWERS OF THE CITY OF LONDON.

"Gentlemen,—Understanding there was to be a meeting of your court to consider a complaint against this company's contractors, for some violation of the regulations of your court in respect of the thoroughfares of the City, the directors called upon their engineer to report to them thereon, and a copy of his report we have hereunto annexed. We trust that the explanation he has given will be deemed satisfactory: if any more should be required, the wishes of the court shall in every respect be complied with.

"We request the attention of the court to Mr. Croll's suggestions, that some additional provision should be made by the paviour to follow up the pipe-layers and service-layers with greater despatch. We shall be happy to pay any extra charge which these extra exertions may call for, to be determined by the officers of the commission.

"Under the deed into which this company has entered with your hon. court, it is provided that the corporation of the court of aldermen shall be at liberty to appoint inspectors to test the company's metres. We have applied to the inspectors of weights and measures employed by the corporation to undertake this duty, but they do not feel at liberty to do so without a special appointment; we have, therefore, promiscuously appointed a person to test and seal the metres until other arrangements can be made. The directors will be happy to learn the wishes of the Court of Sewers as to the best mode of carrying out this provision in the deed.

"By order of the board of directors,

"R. M. MASSEY, Secretary.

"Great Central Gas Consumers' Company,
48, Moorgate-street, Sept. 3."

"Great Central Gas Consumers' Company,
"48, Moorgate-street, Sept. 2.

"Gentlemen,—In consequence of the notice from the city solicitor of a complaint lodged in his office, that the contractors laying this company's pipes had closed some of the thoroughfares by day, in violation of the arrangement with the surveyor of the Court of Sewers, I have made, as you desired, inquiries into the facts, and I found that in one instance it had been done with the consent of the inhabitants of the street. In two or three other cases it arose from unexpected impediments encountered by the workmen, which had rendered it impossible to close the trenches until those impediments had been removed; and in two other instances, where it appeared to me it might be done without creating greater obstructions, I caused the thoroughfare to be reopened, in obedience to the regulations of the Court of Sewers, and in conformity with the city solicitor's notice.

"I am happy to say that four-fifths of the mains and pipes throughout the city have now been laid, and the remainder the contractors assure me will, in accordance with their agreement, be completed by Saturday week.

"The service-layers are following up the pipe-layers with the greatest possible expedition, and they are followed by the city paviours with all practicable despatch. At this period of the year there is a great demand for the labour of paviours; I am therefore fearful that the City paviour may experience difficulty in getting extra hands, without some extra allowance from the company to meet the extra charge which this undertaking will cast upon him. I therefore submit to the directors, that they should propose to the Court of Sewers to allow the City paviour something beyond the contract price, to enable him to secure men to complete the paving with greater despatch than could be expected under ordinary circumstances. This has already been suggested; but the surveyor to the Court of Sewers does not feel himself at liberty to allow anything beyond the contract price without the sanction of the commissioners.

"The company's officers report that, in every district of the City where they have presented themselves to lay in the services, they have been received with the greatest cordiality; and, with very few exceptions, the temporary inconvenience occasioned by the company's operations has been borne without a murmer of discontent.

"Every effort has been made by me to diminish the amount of this inconvenience, and to abridge its duration; and I fearlessly affirm that, from the hearty co-operation of the citizens, the combined exertions of the company's officers and those of the contractor have been eminently succesful in producing these results. It is a matter of notoriety that the streets of the City are crowded with gas and water pipes, which interlace each other in all directions. To lay down the stupendous mains and pipes of this company the contractors have been obliged, in many cases, to place them under the other pipes, at depths where the workmen have had to encounter the foundations of the ancient City walls and buildings, which it has taken them great time and labour to remove. When these circumstances are taken into consideration, it will stand recorded in the annals of operations of this nature, as a fact creditable to this age of progress, that without any accident worthy of note, the Great Central Gas Consumers' Company, within the space of three months, will have laid down nearly sixty miles of pipes in a crowded city covering less than a square mile, and where materials and workmanship may challenge competition. The calibre and capacity of these pipes are sufficient to supply every consumer in the City with gas 50 per cent. in quantity beyond that which the two old companies furnish. The service layers and gasfitters will in the same short space have laid above 6000 services, and will have connected them with 6000 meters and fittings in the consumers' houses.

"Although, by unparalleled exertions, we have been thus able to accomplish so much in so short a space of time with comparatively little inconvenience to the public, the directors will be pleased to recollect that these exertions have been made to overcome difficulties which were not of our own seeking. Had not the company been delayed for months by the unfair opposition of rival companies, the works would have been commenced in March, instead of beginning on the 27th of June, and the operations of the company spread over six months instead of three, and more perfect arrangements might have been made for the public accommodation."

"Notwithstanding the extra expense which this unusual state of circumstances has created, I have reason for believing that the cost will not exceed my estimate, and that the whole of the main pipes, with the 6000 services and meters, will be laid down for less than £70,000.

"From the returns made by the service layers, and from the general good feeling which seems to pervade the City, I am satisfied that the quantity of gas contracted for by the consumers will be immediately required, and that the company's dividend of 10 per cent. on their £150,000 capital would be safe, if the directors should think proper to reduce the charge for gas at once to 3s. 4d. per 1000 cubic feet. This resolution would have the immediate effect of stimulating consumption; and, as the selling price of the article when the works are completed will be mainly ruled by the quantity of gas supplied, I entertain the confident opinion that by September, 1851, the company might announce a further reduction in price. All which I submit to the judgment of the board. "I am, Gentlemen, your most obedient servant,

"To the Directors of the Great Central Gas Consumers' Company." "A. Angus Croll.

Upon the motion of Mr. H. L. Taylor, the particulars of the contract were then read. He then, in order to show that the contract was violated, questioned Mr. Haywood, the surveyor to the commissioners, to whom the superintendence upon the part of the court was consigned.

Mr. Haywood, in reply, said he had arranged with the company that the work in Watling-street and Cannon-street should be done in the nighttime.

Mr. H. L. Taylor argued that the company had broken faith by beginning in the daytime in those streets, that a stop ought at once to be put to the work, and that no more streets should be disturbed in the daytime.

In answer to questions put by Mr. Deputy Lott and Mr. H. L. Taylor,

Mr. Haywood said, that when the commissioners decided to allow the new Gas Company to lay their pipes, he asked the court to allow him to write to the company for a statement of the pipes intended to be laid by them, and of their time of laying them, for his correction, if correction should be necessary, and for the decision of the court upon the subject. The court, however, were pleased to refuse that application in a manner flattering to him, and left the matter entirely to his judgment. If, therefore, he allowed to be opened in the day some streets which should in the judgment of some have been opened only at night, he much regretted the circumstance, but it arose merely from an error in judgment. The distinction between what was a secondary street and what was a first class street was purely arbitrary. One person might call a street first-class which he considered to be second-class. He was always fully aware that, whatever skill might be employed, the performance of so large a work in so short a time must be fraught with temporary inconvenience to the public, and the moment the court had confided to his judgment the times of laying the pipes, he took care to make regulations for such purpose. He believed it to be his duty to do nothing to hinder the new Gas Company from laying their pipes as quickly as possible, but to make such regulations as would protect the public as much as possible from inconvenience during the operations, and, taking the various and manifold circumstances into account, and the almost utter impossibility of making good work and closing in by the morning, he believed the balance of advantage to the public to be obtained by allowing the company to lay their pipes by day as well as by night, by which means a street might be completed in two or three days instead of remaining a fortnight or more in disorder. In some cases it was indeed impossible to lay their pipes at night. Cannon-street was an example of that impossibility. The workmen had commenced at night in that street, but were obliged to proceed with the work in the day, and although they certainly had done so without leave in that instance, if he had been applied to he should, under the circumstances, have given them permission, for, in fact, a prohibition to lay their pipes by day there would constitute a total prohibition. He did not consider that a refusal in such a case would be part of his duty.

Mr. H. L. Taylor rose to submit a motion to the court, founded on all that had been stated to them that day. He gave the company credit for the activity they had displayed, for the number of men they had employed, and for the skill they had exercised, but he could not give them credit for violating the contract which they had entered into, and the violation of which had already inflicted heavy pecuniary losses upon the citizens of London. He knew well that, had not the company been so intimately connected with the corporation and the commissioners of sewers, they would not have been allowed to exercise so injurious a privilege. He called upon the court peremptorily to demand that for the future none of the principal streets should be broken up in the day, and he declared that it was the consummation of the farce which the company had been playing to allow them to escape from the legal consequences of their transgression. Mr. Taylor concluded by moving that the solicitor and other officers of the company be directed to take immediate steps to enforce the regulations made by the court, and, in the event of any further violation of the contract, to institute immediate proceedings for such violation.

Mr. Deputy Lott seconded the motion, and called upon the commissioners to consider that the eyes of their fellow-citizens were upon them.

Mr. Holt, in moving the previous question, said, that every one witnessed with astonishment the exertions of the company, and spoke in terms of high praise of the liberal course which they had adopted towards the other companies to induce them to lower the exorbitant prices which had led to all these extraordinary movements.

Mr. Hopgood seconded the amendment, and spoke of the violent but ineffectual efforts which had been made to obstruct the labours of the Great Central Gas Company.

Mr. Deputy Watkins admitted that every credit was due to the company for their exertions, but he complained of their broken faith and the public injury occasioned by such an error.

The question was then put, and there appeared 10 for and 10 against the previous question.

The Chairman, in giving the casting vote in favour of the amendment, said, he voted against Mr. H. L. Taylor's motion because he was convinced the public would be greatly benefited by the operations of the new Central Gas Company.

The meeting then adjourned.

Gillard's Water and Platinum Gas.—The discoverer of this new mode of obtaining artificial light is now in Manchester. M. Gillard was one of M. Guizot's secretaries; but having a greater inclination to philosophy than diplomacy, he left the service of that gentleman, and in the diligent pursuit of his favourite study, arrived at what may very likely prove a most important object in our social and industrial economy. A patent has been specified for this country, and at the works of Mr. A. Kurtz, of Cornbrook-house, Hulme, a specimen of the new mode of producing the gas, as well as its result in its brilliant illumination, may now be seen. Though "comparisons are odious," we may be allowed to recal the objections which are commonly urged against coal gas, the sulphuric and ammoniacal emanations, the smoke, the smell (though not unpleasant to some), the discolouration of metals, pictures, books, furniture, &c. From these serious inconveniences the new gas, is, it is said, entirely free; and if, joined to such advantage, it can be proved, as maintained by the discoverer, cheaper than coal gas, it will certainly have achieved much. Impressed with the importance to the public of such a subject, we have been at some trouble to ascertain what the particulars of this new system are. On inquiry, we find that the water and platinum gas can be adapted to any existing gas works, with very trifling modifications. M. Gillard professes to produce more than 6500 cubic feet per 24 hours, with only 1 cwt. of charcoal, and with an ordinary retort. The gas is generated by the introduction of steam into the retort over a layer of incandescent charcoal. An inch pipe is connected with the steam boiler employed on Mr. Kurtz's works, and thence runs to the back of the retort furnace, passing underneath the fire bars, and up the front of the furnace, to a common D retort, 1 foot in diameter. A ¾-inch pipe is then carried the whole length of the interior of the retort upon supports 4 inches high. The under side of this tube is perforated with three rows of fine and closely arranged holes. The retort having been brought to a white heat, the bottom is covered with charcoal, which soon reaches a state of incandescence, and the steam impinging upon it is decomposed, forming pure hydrogen and carbonic acid, which, passing through lime, leaves the hydrogen free. This gas, which has been known for half a century, is useless for illumination when consumed in the ordinary way, and it is the means employed which constitutes the principal part of M. Gillard's invention. It can be applied both as light and as fuel. If as fuel, it can, from its almost perfect purity, be burnt in the very centre of a room, the temperature of which it raises in a very short time to 18 or 20° centigrade. Indeed, Monsieur Payen, a member of the French Institute, and professor at the Conservatoire des Arts et Métiers, positively asserted, in the concluding lecture of his course, last April, that it was the most perfect system of heating that could be devised; inasmuch as not one particle of the caloric need be lost by the consumer. Of course, the "Gillard gas" is easily applied to many industrial purposes, such as the singeing of calico, the smelting of iron, &c.; and last, though not least enticing for the ladies, to cookery. If used for lighting, the gas is made to pass through a kind of argand burner, surmounted by a platinum wire-wick, something like net-work. It consists merely of a cage of very fine platinum wire on a small brass frame, fitted on to an argand burner in such manner that the top reaches a little above the dull hydrogen light, which, the instant the platinum cage is applied, is converted into a globe of intense white light over the whole surface of the gauze, with an appearance of an inner flame rising rather above. The light is perfectly pure, and by it the shades of green and blue can be accurately distinguished. M. Gillard is not only making arrangements for lighting Mr. Kurtz's house throughout, but for warming it by this gas, hydrogen being well known to give out intense heat; and for cooking, M. Gillard affirms that by it he can cook a fowl fit for table in five minutes, and a leg of mutton in a quarter of an hour. It is lighted like ordinary gas, and communicates to the platinum a soft steady light. M. Gillard will afford any practical or scientific gentleman every facility to investigate the production, the consumption, and the cost price of his gas.—*Manchester Examiner.*

The following letter on this subject has since appeared in another Manchester paper:—"Your interesting and elaborate detail of the apparatus used in making M. Gillard's gas at Cornbrook, and your favourable impression of the results which you witnessed, induced me last night to go there, accompanied by a scientific friend, whose chemical knowledge has long been highly appreciated in this neighbourhood. This I should probably not otherwise have done, as I considered the question of producing diffusible light, applicable to the purposes of illumination, to have been long since settled, by the failure of all attempts to render useful the brilliant incandescence produced by impinging the oxy-hydrogen flame upon lime, or Dobereiner's interesting application of the light produced by a stream of hydrogen in contact with spongy platinum. The production of gas by the decomposition of water, passed over heated charcoal, has, as you justly observe, been known many years; and if M. Gillard has succeeded in giving illuminating power to the gases obtained from water, by merely affixing a platinum capsule to each burner, he has, indeed, achieved an important result, which, situated as I am at present, I should hail with peculiar satisfaction. My friend and I were shown into a small counting-house, where every attention was paid to us that politeness could dictate. The room is about 15 to 18 feet in length, but I think not more than 9 or 10 in breadth. The apparatus being in one corner, has hardly fair play in lighting the apartment. When we tried the meter it was passing at the rate of 5 2-10 feet per hour, through an argand burner,

being, as you are aware, double the consumption of the ordinary batswing of the shops.* The room was very dimly lighted. At six feet from the burner, we could read the print of the *Guardian* well; at 12 feet, without difficulty; and in a corner, 18 feet from it, we could just manage to make out the print. The gas from the Manchester works not being yet laid on, we had not the opportunity, which we particularly desired, of testing the comparative illuminating power of the two, but in returning to town we entered a good-sized butcher's shop, where one batwing was burning. The shop was infinitely better illuminated than the counting-house had been, and at 12 feet from the burner, we had as much light to read the print of the *Guardian* as we could have wished. Our united opinion, after this cursory examination, is, that this brilliant incandescent platinum will not give out such a quantity of diffused light as will render it of value for the ordinary purposes of illumination, but for light-houses, where there is an advantage in seeing a bright object at a great distance, it may become very valuable; and besides this, as the platinum capsule, to be of use, must be perfectly bright, it would be difficult to protect it from the action of sulphur in our smoky atmosphere, without more care than ordinary gas consumers can be expected to exercise. If these few remarks induce those of your numerous readers, who go to inspect this very ingenious and beautiful invention, to devote particular attention to the comparison of the distance at which they can pleasantly read or write from this argand burner, consuming from 5 to 8¼ feet per hour, as the pressure happens to be, with that at which they can do the same thing equally well at home, with their ordinary batswing, consuming 2¼ feet only, my object in troubling you to insert them will be fully answered."

THE WESTERN GAS COMPANY.—This company has obtained permission to lay down its pipes for the supply of cannel coal gas in the important parish of St. James's, Westminster. It is understood that the contract for the public lamps is £3. 12s. 6d. each, and for the private consumers 7s. per 1000 feet. This company uses Ramsay's Newcastle cannel exclusively.

STEWART'S PATENT PIPES.—Some excellent specimens of these are now being laid down for the Great Central Gas Consumers' Company, which have elicited general admiration for their perfect workmanship and regularity of form and thickness. The same commendation cannot be applied to all the pipes supplied to this company, some of them being so deficient in strength of socket as to render it almost impossible to make a sound joint. We allude especially to those marked G. W. and Co., the lead in the joints of which has either remained uncaulked, or the sockets have been split in caulking; indeed, the pipe-laying in general appears to us to have been so slovenly and hastily done, as to render it tolerably certain that the citizens of London will be half poisoned when once the new mains are charged with gas, and the streets kept in continual confusion for years to come, till the leaks are discovered and repaired. The damage done to the mains and services of the old companies is considerable.

LAMING'S PATENT.—The Chartered Gas Company has entered into a contract for the use of this improved system of purification at their Westminster station, the cost of which will not exceed one halfpenny per 1000 feet of gas purified. The old dry-lime purifiers serve without alteration for the new process, which has also been adopted by many other important companies.

THE ELECTRIC TELEGRAPH is being adopted to communicate between the station of the Great Central Gas Company at Bow and the central office in the city of London. A copper wire coated with gutta percha is passed through the gas main, by which instantaneous communications can be made. At all times, but especially in foggy weather when the city is enveloped in dense fogs while the suburbs are clear, this ingenious application of the greatest invention of modern days must be of immense utility.

SOYER'S MAGIC STOVE.—We were invited a few days since to witness the operation of this well-puffed toy, by a friend whom the savoury flavour of some dish stated to have been cooked by it, had induced to invest 35s. in the purchase of one of them. Nine pennyworth of spirits of wine were put into the lamp, which became exhausted in 42 minutes, just as ebullition had commenced in the quart of water upon which the experiment was tried. Our friend is now anxious to find a customer for the magic instrument, or will exchange it for a gas cooking range, paying the difference in value.

ISLINGTON PAROCHIAL REFORM ASSOCIATION.—At a meeting of this association, held on the 28th ult., Mr. D. Harris brought up a report of a committee of the association in reference to the question of cheap gas. It stated that the committee had had communication with the three parishes of Marylebone, St. Pancras, and Paddington, in reference to this subject, and they had received assurances of the hearty support of those parishes in demanding that the consumers should have their gas at the same price, namely, 4s. per thousand feet, as the city of London, Shoreditch, and other places. It recommended that a great meeting of the four parishes should be speedily held; but that in the mean time the secretary be requested to write to the Imperial Company, stating the amount of reduction sought for, and requesting the answer of the directors as to whether they were willing to meet the spirit of the times in regard to the price of gas. In the event of the answer being favourable, the parishes to pledge themselves to oppose by all legal means the introduction of any other company; but otherwise not to cease a steady and determined agitation until the object of reduction is accomplished. This report was unanimously adopted, as was a resolution to issue an address to all the gas consumers of the district, showing the steps which the association had taken.—*Observer.*

* It must be borne in mind that the Manchester gas here alluded to is extracted from Wigan cannel, and is 75 or 80 per cent. superior to that made from Newcastle coal.

Advertisements.

METER INDICES.

J. CLUER, Gas Meter, Index Maker, and Model Machinist, No. 1, Bowling-green-lane, Clerkenwell, London.

INDICES and all other Apparatus for Gas Meters of every size and kind, made on the shortest notice, of the best metal, and of superior workmanship.

ANDREW McLAREN and CO., Steel-yard Wharf, 87, Upper Thames-street, London, have always in Stock a large Assortment of Cast-iron Socket and Hot-water Pipes, Wrought-iron Tubing with Connections, with a variety of goods adapted for every purpose, all of the best quality, and at the lowest price.—Contracts taken to any extent.

H. JONES, Gas Meter Manufacturer, No. 41, OLD-STREET, St. Luke's, London, begs respectfully to call the attention of Gas Companies to his latest improvements in the WET METER, by means of which water cannot be abstracted, neither can Gas by any possibility pass through the Meter without registering.

CHARTERED GAS OFFICE, BRIDGE-STREET, BLACKFRIARS. — The DIRECTORS of the CHARTERED GAS COMPANY respectfully remind their Customers and Friends in the City of London and Liberties thereof, that they have already given a pledge to place them upon as FAVOURABLE TERMS as those of any rival gas company, which they now beg to repeat, with the addition, that the directors are willing to enter into contract accordingly.

Having, forty years since, at great hazard, and with much perseverance and expense, BEEN THE FIRST to supply the PUBLIC with gas, the Directors feel that they have a claim to preference at this time.

September 2, 1850.

THE Registered Cylindrical Gas Stove possesses all the advantages which belong to gas stoves in general, with the addition of many peculiar to itself; its great distinguishing merit is the internal arrangement, by which none of the gaseous vapour escapes into the apartment, so that a pure atmosphere is constantly preserved. It will be found of the utmost value in churches, chapels, manufactories, halls, libraries, bedrooms, nurseries, greenhouses, conservatories, &c.—Prices 28s., 35s., 40s., and 45s. each, at DEANE, DRAY, and DEANES, Domestic and Public Gas Fitting Manufactory, No. 3, Arthur-street East, London-bridge.

PATENT FIRE-CLAY RETORTS.

ORLANDO BROTHERS and RAILTON, Manufacturers of O. Brothers's Patent, beg to state that these RETORTS being made in ONE ENTIRE OPERATION, and in ONE PIECE of any required shape, length, breadth, and height, are not liable to Cracks and Fissures, of which there is a just and general complaint; and they are consequently superior to and cheaper than any hitherto manufactured.

Prices per foot in length:—

	At Blackburn.	In London.
12 in. by 12	7s. 0d.	8s. 3d.
14 in. by 12	8s. 0d.	9s. 6d.
16 in. by 12	8s. 6d.	10s. 3d.
18 in. by 15	9s. 6d.	11s. 6d.
19 in. by 13	9s. 6d.	11s. 6d.
24 in. by 15	11s. 6d.	13s. 9d.

exclusive of the angle-iron flanges.

References and further particulars may be obtained on application to the Patentee, Gas Works, Blackburn; or to Messrs. George Barlow and Son, 9, Charterhouse-square, London.

JOSEPH BOULTON, Gas Meter Manufacturer, No. 1, COPPICE-ROW, CLERKENWELL, LONDON, begs to call the attention of Gas Companies and the public in general to his improved GAS METER, containing all the latest improvements.

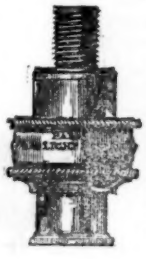
J. B. warrants all Meters to be manufactured of the best materials and workmanship, the wheels, &c., being of metal. Old Meters repaired on the lowest terms.

M. KELLY, Cast Iron Wharf, 31, Bankside, London. — Retorts of superior quality, Socket and Flange Pipes, Bends, Branches, Syphons, and every description of Castings for Gas and Water Works, Gasometers, Tanks, Purifiers, Condensers, &c., erected complete, or the materials supplied.

Gas Valves and Sluice Cocks on an improved principle. Patent Gas Tubing and Connections.

A stock of the above articles kept.

The Pipes and Retorts supplied by M. K. are cast vertically, which ensures soundness and equality of thickness throughout.



THE New Patent GAS LIGHT MONITOR, adapted to every description of Burner, and supplied at a cost placing it within the reach of every consumer of Gas, regulates the flame to any required height, economizing the consumption, and preventing the danger and inconvenience arising from the flaring and smoking of lights. 20, King William-street, Charing-cross, London.

THE GUTTA PERCHA COMPANY, PATENTEES, 18, WHARF ROAD, CITY ROAD, LONDON.

GUTTA PERCHA TUBING.

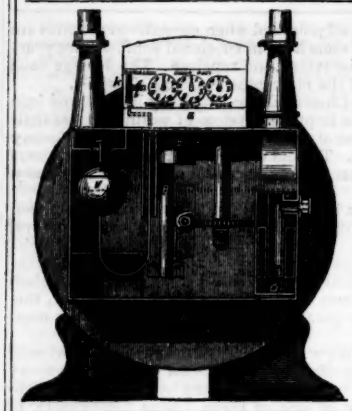
GUTTA Percha Tubing, being unaffected by moisture, acids, alkalies, grease, &c., is useful for the conveyance of Water, Oil, Chemicals, Liquid Manure, &c. It is peculiarly valuable for Drain and Soil Pipes. In case of any stoppage, an incision can be made in the tubing with a sharp knife, and readily closed again by means of a warm iron. Its strength is extraordinary; the small half-inch diameter tubing having resisted a pressure of 250lb. on the square inch without bursting.

Gutta Percha is totally impervious to wet, and may be steeped in water or buried in damp or marshy grounds for years. IT IS NOT SO LIABLE TO INCRUSTATION, and, from its peculiar property as a non-conductor, is not affected so soon by the frost of winter as metal piping.

The smaller sizes of the Tubing may be had in lengths of from 100 to 400 feet, and the larger sizes of 50 feet, each.

The extraordinary power possessed by Gutta Percha Tubing as a CONDUCTOR OF SOUND renders it invaluable for conveying messages from one room or building to another.

Every variety of Gutta Percha Articles manufactured at the Company's Works, Wharf-road, City-road, London; and sold by their Wholesale Dealers in town or country.



HULETT and CO.,

55 and 56, HIGH HOLBORN, LONDON,

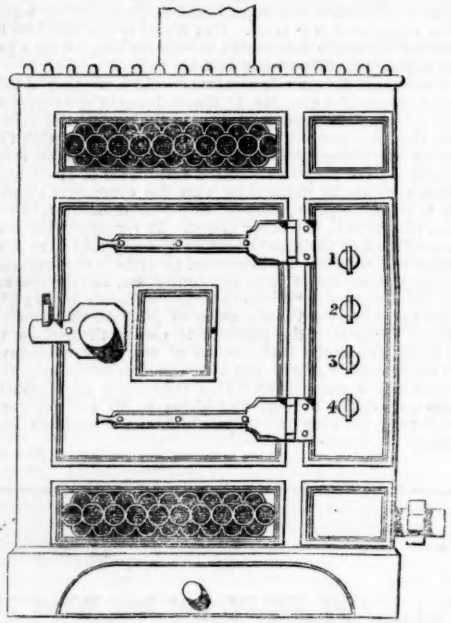
Beg to invite the attention of Gas Companies, Gas Fitters, and the Trade generally, to the

PATENT NATIONAL GAS METER,

of which they are the Manufacturers, with the newly-invented Water Line Indicator, and other Improvements, preventing the possibility of fraud on the one hand and accidents from carelessness on the other. The above Meters are manufactured of the very best materials, and the workmanship cannot be surpassed. They are also Manufacturers of every description of Gas Chandeliers, Pendants, Brackets, and every article connected with Gas and Steam Fitting. An extensive assortment always on show. Cast and Wrought Iron Pipe, Copper, Brass, Tin, and Composition Tubing; Argand, Shadowless, and Culinary Burners; Horse-singeing Apparatus, &c. &c.

The Improved Service Cleanser, by which services and gas fittings may be thoroughly cleaned in a few minutes; particulars of which may be had free by sending an envelope with name, address, &c.

Large size pattern Books, containing Copperplate Engravings of Chandeliers and Gas Fittings, price 20s.; small ditto (of Common Fittings), 3s.; may be obtained on receipt of Post-office Order, payable at Post-office, 62, High Holborn.



THE

LIVERPOOL GAS COOKING RANGE,

As manufactured by

W. STRODE, 16, ST. MARTIN'S-LE-GRAND,

Upon the plan of ALFRED KING, Esq., Engineer to the Liverpool Gas Company, is generally acknowledged to be the most useful and effective GAS COOKING APPARATUS.

The sizes now made are—

Single Roaster, with three Burners, for Boiling, 2 feet square.

Double Roaster, with five Burners, for Boiling, 3 feet 6 inches by 2 feet.

Three Roasting Chambers and eight Burners, for Boiling, 4 feet 10 inches by 2 feet.

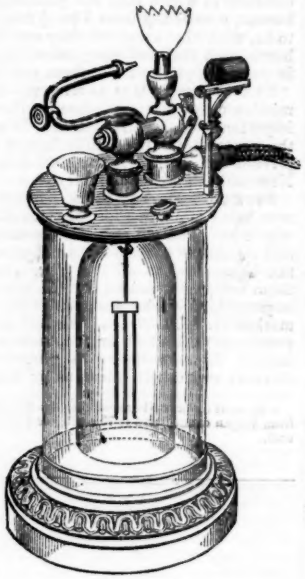
W. STRODE also manufactures Mr. KING'S GAS BROILER, 12 inches square, competent to the Broiling of a dozen chops in seven minutes. The economy and advantage of this apparatus is now generally known and acknowledged.

The conditions essential to the successful use of all Gas Cooking Ranges seem to be a day pressure of about 7-10ths; with a separate Service Pipe and Meter.

An indispensable condition of Gas Cooking is, that the Range should be placed under a Chimney, or near to one with a funnel leading into it, having a sufficient draught through to carry off the products of combustion, as well as the smell and steam of the cooking. It is advisable to use the Gas Torch to light the burners with, and a Governor or Regulator of Pressure is also desirable.

W. S. manufactures RIDDLE'S SELF-IGNITING GAS BURNER, being a modification of the Hydrogen Light in connection with a Coal Gas Burner. This instrument is very useful and effective on the gas lecturer's table, and with the Portable Naphthalizer of George Lowe, Esq., affords a ready means of illustrating the value of different quantities of Carbon in the gases used for lighting purposes.

General Gas Apparatus Manufactory,



16, ST. MARTIN'S-LE-GRAND, OPPOSITE THE GENERAL POST-OFFICE; WAREHOUSE ENTRANCE, 3, ANGEL-STREET, LONDON.

Fig. 4.

Fig. 5.

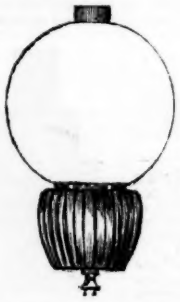
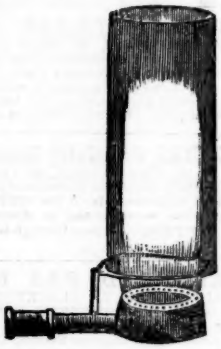


Fig. 6.

Fig. 7.



METROPOLITAN LIGHT COMPANY,

447, WEST STRAND, LONDON,

RICHARD CLARK, RESIDENT MANAGER.

The Company, in giving notice of these burners, present also an outline of their principle. The Golden Burner, shown by drawing No. 4, is the best bulb flame burner known; and this is accomplished by the currents of air to the flame being undivided, and by a perfect combination of oxygen and carbon; thus all the light is pure—the price is 3s. 6d., 4s., and 4s. 6d. each, complete. The Glass Burner, shown by drawing No. 5, being closed in with glass, is protected from external draughts, which produces results not hitherto attained in gas light. By the burner being supplied with a volume of warm air, the illuminating power of the carbon is not checked, and hence a pure and steady light is given—the price is 13s. complete. The Reflecting Burners, shown by drawings Nos. 6 and 7, can also be had as upright burners. These burners are the most shadowless burners made; the flame is very white and steady, they consume the gas that is entering into a state of combustion more perfectly than any burner hitherto produced (excepting the other burners here quoted, which are founded on the same principles). The burner No. 6, with reflector complete, is 7s. 6d. The burner No. 7 is 3s. 6d. complete. The company also have a burner which surpasses the Bude Light in every respect, and with only one circle of flame, and which can be screwed on to any fittings, price £3. 10s. complete. A very liberal discount is allowed to gas companies and the trade. The Company will simply quote one testimonial.

(COPY.)

"Laboratory, Royal Polytechnic Institution.

"Sir,—After a careful examination of your New Gas Burners, which I have tested in comparison with the best hitherto known, I am compelled to acknowledge that your recent discovery is superior in all others in economy, and in the purity of the flame produced by it.

"By the simple, yet truly scientific arrangement of your burners, you have succeeded perfectly in obtaining the proper supply of air, both in *quantity and position*: thus, the flame is, at all times, steady and intensely luminous, while even under suddenly increased pressure, or during draughts of air, no smoke is given off.

"I remain, Sir, yours faithfully,

"JOHN RYAN, M.D., LL.D., Professor of Chemistry.

"Mr. Richard Clark, Strand."

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